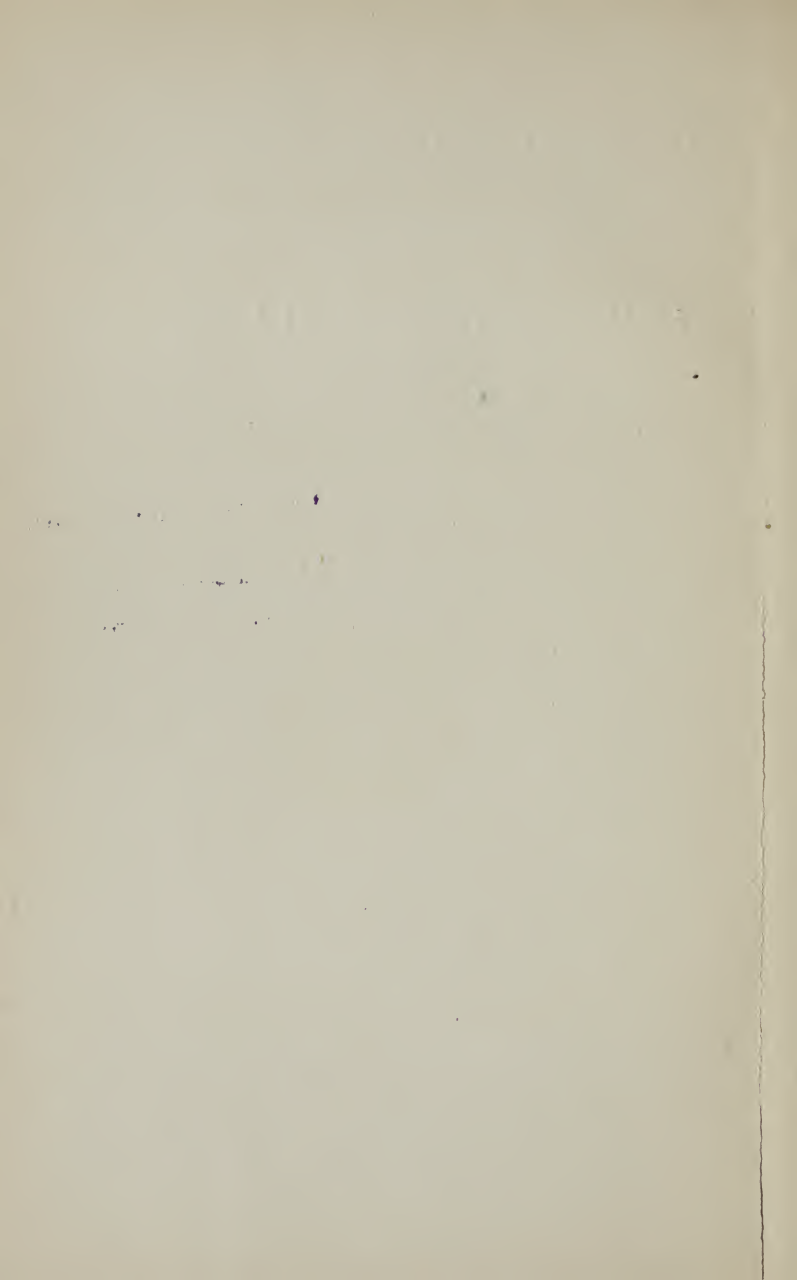


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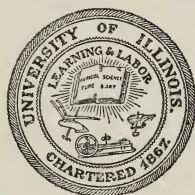


COLLEGE OF LITERATURE AND ARTS

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UNIVERSITY OF ILLINOIS

PRESIDENT'S OFFICE



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CONTENTS

Board of Trustees.....	4
University Calendar.....	5
The University.....	7
Libraries.....	8
College of Literature and Arts.....	9
Faculty....	9
Aims and Scope....	13
Admission.....	13
Description of subjects accepted.....	15
Requirements for Graduation.....	24
Electives.....	26
Courses of Instruction.....	28
Courses in Business Administration.....	29
Legal Study and College Work.....	36
Combined Arts and Engineering Course.....	38
Honors.....	38
Oratorical Contests.....	40
Scholarships.....	41
Beneficiary Aid.....	43
Expenses.....	44
Description of Courses.....	45
Index.....	132

BOARD OF TRUSTEES

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THE UNIVERSITY CALENDAR

1909

FIRST SEMESTER, 1909-1910

Sept. 15, Wednesday, 8 a. m.	Entrance examinations begin
Sept. 20, 21, Monday and Tuesday, 8 a. m. to 5 p. m.	Registration days
Sept. 22, Wednesday, 8 a. m.	Instruction begins
Nov. 1, Monday	Latest day for announcing thesis subjects
Nov. 18, 19, 20	High School Conference
Nov. 24, Wednesday, 5 p. m.	Thanksgiving recess begins
Nov. 29, Monday, 8 a. m.	Instruction begins
Dec. 22, Wednesday, 5 p. m.	Holiday recess begins
1910	
Jan. 3, Monday, 8 a. m.	Instruction begins
Jan. 27, Thursday, 8 a. m.	Semester examinations begin
Feb. 3, Thursday, 5 p. m.	First semester ends

SECOND SEMESTER, 1909-1910

Feb. 7, 8, Monday and Tuesday, 8 a. m. to 5 p. m.	Registration days.
Feb. 9, Wednesday, 8 a. m.	Instruction begins
Feb. 12, Thursday	Lincoln day
April 7, Thursday, 5 p. m.	Easter recess begins
April 12, Tuesday, 8 a. m.	Instruction begins
May 14, Saturday, noon.	Latest date for receipt of doctors' theses by the Dean of the Graduate School.
May 20, Friday evening	Interscholastic oratorical contest
May 19, 20, 21, Thursday to Saturday	Public school art exhibit
May 21, Saturday	Interscholastic athletic meet
May 30, Monday	Military day
May, between 15 and 31	Hazelton prize drill
	Annual inspection
	Company competitive drill
June 1, Wednesday	Latest day for acceptance of theses other than those in the Graduate School.
June 4, Friday, 8 a. m.	Semester examinations begin

June 5, Saturday, noon.	Latest date for receipt of certified masters' theses by the Dean of the Graduate School.
June 11, Friday, 5 p. m.	Semester examinations close
June 12, Sunday	Baccalaureate address
June 13, Monday	Class day
June 14, Tuesday.	Alumni day
June 15, Wednesday	Thirty-ninth commencement
SUMMER SESSION, 1910	
June 20, Monday	Instruction begins.
Aug. 19, Friday.	Session ends

THE UNIVERSITY

The University of Illinois is situated in Champaign county, in the eastern central part of the state, between the cities of Urbana and Champaign, and within the corporate limits of the former. It is one hundred and twenty-eight miles south of Chicago, at the junction of the Illinois Central, the Cleveland, Cincinnati, Chicago and St. Louis, and the Wabash railroads. The country around is a rich and prosperous agricultural region. The cities of Urbana and Champaign have, together, a population of about 20,000. They are connected by an electric street railway, which runs through the University grounds, with ten-minute service. The University station of the Urbana postoffice is in the Library Building.

The University comprises the following colleges and schools, part of them located at Urbana and part of them in Chicago. Those at Urbana are:

The Graduate School.

The Colleges of Liberal Arts, including the College of Literature and Arts and the College of Science, the School of Education, and the Courses in Training for Business.

The College of Engineering, including the School of Railway Engineering and Administration.

The College of Agriculture.

The College of Law.

The School of Library Science.

The School of Music.

Those in Chicago are:

The College of Medicine.

The School of Pharmacy.

The College of Dentistry.

In connection with the College of Agriculture the Agricultural Experiment Station for Illinois is maintained at Urbana, partly by State and partly by Federal appropriations.

The Engineering Experiment Station, established by the State Legislature in 1903, is at Urbana, in connection with the College of Engineering.

The offices of the State Laboratory of Natural History, State Entomologist, State Water Survey, and State Geological Survey are located at Urbana.

LIBRARIES

The general University library includes all the books belonging to the colleges and schools of the University which are situated in Urbana. The libraries of the Colleges of Medicine and Dentistry, and the School of Pharmacy, are in Chicago.

The *General Library* is the central collection of books housed in the Library building, and is for the use of the whole University. The corps of instruction and administrative officers of the University, the graduate students, and the members of the senior class have direct access to the shelves; other students may have this privilege upon recommendation by their instructors. All students have the direct use of 10,700 volumes in the reading-rooms. The library receives 1,200 periodicals, the current numbers of which are available in the east tower room. As a part of the General Library are included several special collections:

The Dziatzko collection of Library Economy, bought in 1905, the entire library of Karl Dziatzko, librarian of Göttingen University. 300 volumes; 150 pamphlets. Location: Library school room.

The Dittenberger collection of the Classics, bought in 1907, the entire library of Wilhelm Dittenberger, professor of Classical Philology in the University of Halle. 5,600 items. Location: Senate room.

The Heyne collection of German literature and philology, bought in 1909, the entire library of Professor Moritz Heyne of the University of Göttingen. About 5200 volumes. The collection is rich in the general field of German philology and especially in lexicography. It has many rare first editions of works of German literature from the sixteenth, seventeenth and eighteenth centuries, and has sets of a number of rare periodicals. It is also rich in works upon the history of German civilization.

MASON LIBRARY OF WESTERN HISTORY

The valuable library of western history collected by Edward G. Mason, Esq., long president of the Chicago Historical Society, is in the Public Library of the city of Champaign, and is accessible to University students.

COLLEGE OF LITERATURE AND ARTS

THE FACULTY*

EDMUND JANES JAMES, Ph.D., LL.D., President.

EVARTS BOUTELL GREENE, Ph.D., Dean.

GEORGE HENRY MEYER, A.M., Assistant Dean.

In Art and Design:

EDWARD JOHN LAKE, B.S., Assistant Professor.

ISABEL JONES, Instructor.

MARY MINERVA WETMORE, Instructor.

CHARLES FABENS KELLEY, A.B., Instructor.

In Classics:

HERBERT JEWETT BARTON, A.M., Professor, Latin.

CHARLES MELVILLE MOSS, Ph.D., Professor, Greek.

WILLIAM ABBOTT OLDFATHER, Ph.D., Associate Professor.

ARTHUR STANLEY PEASE, Ph.D., Assistant Professor.

In Germanic Languages:

JULIUS GOEBEL, Ph.D., Professor.

OTTO EDUARD LESSING, Ph.D., Associate Professor.

GEORGE HENRY MEYER, A.M., Assistant Professor.

NEIL CONWELL BROOKS, Ph.D., Assistant Professor.

DAISY LUANA BLAISDELL, A.M., Instructor.

CHARLES MARSHALL POOR, Ph.D., Instructor.

JOSEF WIEHR, Ph.D., Instructor.

JAMES ALBURN CHILES, LL.B., Ph.D., Instructor.

ERNST OTTO ECKLEMAN, Ph.D., Instructor.

L

In Scandinavian Languages:

GEORGE TOBIAS FLOM, Ph.D., Assistant Professor.

In Romance Languages:

THOMAS EDWARD OLIVER, Ph.D., Professor.

DAVID HOBART CARNAHAN, Ph.D., Associate Professor.

JOHN DRISCOLL FITZ-GERALD, II, Ph.D., Assistant Professor.

ARTHUR ROMEYN SEYMOUR, Ph.D., Associate.

EDWARD JOSEPH FORTIER, A.B., Associate.

FLORENCE NIGHTINGALE JONES, Ph.D., Instructor.

*The following list includes not only the departments primarily associated with the College of Literature and Arts, but also those in other divisions of the University whose work is most closely related to that of this College. The named assistants are omitted.

———, Instructor.

In English :

DANIEL KILHAM DODGE, Ph.D., Professor.
 THOMAS ARKLE CLARK, B.L., Professor.
 CHESTER NOYES GREENOUGH, Ph.D., Professor, Chairman.
 EDWARD FULTON, Ph.D., Associate Professor.
 STUART PRATT SHERMAN, Ph.D., Associate Professor.
 EDWARD CHAUNCEY BALDWIN, Ph.D., Assistant Professor.
 HARRY G. PAUL, A.M., Assistant Professor.
 FRANK WILLIAM SCOTT, A.M., Associate. (On leave)
 THACHER HOWLAND GUILD, A.M., Associate. (On leave).
 ERNEST MILTON HALLIDAY, A.B., LL.B., Associate.
 HARRIE STUART VEDDER JONES, Ph.D., Associate.
 WALTER CLARK PHILLIPS, A.M., Instructor.
 STEPHEN FAUNCE SEARS, A.M., Instructor.
 JACOB ZEITLIN, Ph.D., Instructor.
 EARL H. GARDNER, A.M., Instructor
 MRS. MARY E. FAWCETT, A.M., Instructor.

In History :

EVARTS BOUTELL GREENE, Ph.D., Professor.
 GUY STANTON FORD, Ph.D., Professor.
 CLARENCE WALWORTH ALVORD, Ph.D., Associate Professor.
 LAURENCE MARCELLUS LARSON, Ph.D., Assistant Professor.
 WILLIAM SPENCE ROBERTSON, Ph.D., Assistant Professor.
 LOUIS JOHN PAETOW, Ph.D., Associate.

In Economics :

DAVID KINLEY, Ph.D., LL.D., Professor.
 MAURICE HENRY ROBINSON, Ph.D., Professor.
 ERNEST RITSON DEWSNUP, M.A., Professor.
 ERNEST LUDLOW BOGART, Ph.D., Associate Professor.
 NATHAN AUSTIN WESTON, Ph.D., Assistant Professor.
 JOHN CHRISTIE DUNCAN, Ph.D., Assistant Professor.
 SIMON LITMAN, Ph.D., Associate.
 JOHN GIFFIN THOMPSON, Ph.D., Instructor.
 JOHN KER TOWLES, Ph.D., Instructor.
 DAVID S. WALTER MORTON, A.M., Instructor.

In Political Science :

JAMES WILFORD GARNER, Ph.D., Professor.
 JOHN ARCHIBALD FAIRLIE, Ph.D., Associate Professor.

THOMAS REED POWELL, A.B., LL.B., Associate.

In Sociology:

EDWARD CARY HAYES, Ph.D., Professor.

In Philosophy:

ARTHUR HILL DANIELS, Ph.D., Professor (on leave).

BOYD HENRY BODE, Ph.D., Professor.

FRANK CHESTER BECKER, A.B., Instructor.

In Psychology:

STEPHEN SHELDON COLVIN, Ph.D., Professor.

JOHN WALLACE BAIRD, Ph.D., Assistant Professor.

FRED KUHLMANN, Ph.D., Instructor.

In Education:

WILLIAM CHANDLER BAGLEY, Ph.D., Professor and Director.

LEWIS F. ANDERSON, Ph.D., Assistant Professor.

EDWIN LEE NORTON, Ph.D., Instructor.

In Astronomy:

JOEL STEBBINS, Ph.D., Assistant Professor.

FRANK WALKER REED, Ph.D., Instructor.

In Mathematics:

SAMUEL WALKER SHATTUCK, C.E., Professor.

EDGAR JEROME TOWNSEND, Ph.D., Professor.

GEORGE ABRAHAM MILLER, Ph.D., Professor.

ERNEST JULIUS WILCZYNSKI, Ph.D., Associate Professor.

HENRY LEWIS RIETZ, Ph.D., Assistant Professor.

CHARLES NELSON HASKINS, Ph.D., Assistant Professor.

JOHN WESLEY YOUNG, Ph.D., Assistant Professor.

CHARLES HERSCHEL SISAM, Ph.D., Assistant Professor.

ARTHUR ROBERT CRATHORNE, Ph.D., Associate.

ROBERT LACY BORGER, Ph.D., Associate.

ERNEST WILLIAM PONZER, M.S., Instructor.

LEWIS IRVING NEIKIRK, Ph.D., Instructor.

ERNEST BARNES LYTLE, Ph.D., Instructor.

GUSTAF ERIC WAHLIN, Ph.D., Instructor.

In Physics:

ALBERT PRUDEN CARMAN, A.M., Sc.D., Professor.

CHARLES TOBIAS KNIPP, Ph.D., Assistant Professor.

FLOYD ROWE WATSON, Ph.D., Assistant Professor.

WILLIAM FREDERICK SCHULZ, Ph.D., Assistant Professor.

JACOB KUNZ, Ph.D., Assistant Professor.

ELMER HOWARD WILLIAMS, A.M., Instructor.

WALDEMAR MATTHAEUS STEMPEL, A.M., Instructor.

WILLIAM WARREN STIFLER, A.M., Instructor.

T. S. TAYLOR, Instructor.

In Chemistry:

WILLIAM ALBERT NOYES, Ph.D., Professor and Director.

SAMUEL WILSON PARR, M.S., Professor.

EDWARD BARTOW, Ph.D., Professor.

PHILIP BOVIER HAWK, Ph.D., Professor.

RICHARD SIDNEY CURTISS, Ph.D., Assistant Professor.

WILLIS BOIT HOLMES, Ph.D., Associate.

CLARENCE WILLIAM BALKE, Ph.D., Associate.

EDWARD WIGHT WASHBURN, Ph.D., Associate.

GEORGE MCPHAIL SMITH, Ph.D., Associate.

SAMUEL C. CLARK, M.S., Instructor

HELEN ISHAM, Ph.D., Instructor.

GRINNELL JONES, Ph.D., Instructor.

In Geology:

CHARLES WESLEY ROLFE, M.S., Professor.

WILLIAM SHIRLEY BAYLEY, Ph.D., Associate Professor.

THOMAS EDMUND SAVAGE, A.M., Assistant Professor

RUFUS MATHER BAGG, Ph.D., Instructor.

In Botany:

THOMAS JONATHAN BURRILL, Ph.D., LL.D., Professor.

CHARLES FREDERICK HOTTES, Ph.D., Assistant Professor.

WARD J. MACNEAL, Ph.D., Assistant Professor.

HENRY ALLAN GLEASON, Ph.D., Associate.

CHARLES FRANCIS BRISCOE, A. M., Instructor.

In Zoology:

HENRY BALDWIN WARD, Ph.D., Professor.

FRANK SMITH, A.M., Associate Professor.

FREDERICK WALTON CARPENTER, Ph.D., Associate.

In Physiology:

JOHN HANCOCK MCCLELLAN, Ph.D., Assistant Professor.

OTIS ORION STANLEY, M.S., M.D., Instructor.

In Entomology:

STEPHEN ALFRED FORBES, Ph.D., LL.D., Professor.

JUSTUS WATSON FOLSOM, Sc.D., Assistant Professor.

In Household Science:

ISABEL BEVIER, Ph.M., Professor.

SUSANNAH USHER, B.S., Assistant Professor.

ANNA R. VAN METER, MS., Assistant Professor.

NELLIE ESTHER GOLDTHWAITE, Ph.D., Assistant Professor.

CHARLOTTE MITCHELL GIBBS, A.M., Associate.

HARRIET BECKWITH RENAKER, M.S., Instructor.

HELENA MAUD PINCOMB, B.S., Instructor.

AIMS AND SCOPE OF THE COLLEGE

The purpose of the College of Literature and Arts is to secure for its students a liberal education including both the humanities and the sciences. Students who complete the course receive the degree of Bachelor of Arts. This College is especially adapted to the needs of the following classes of students:

1. Those who wish to pursue a somewhat general course in the arts and sciences as a basis for later professional or technical studies. It will ordinarily be possible for a good student to arrange his work in such a way as to secure, within six years, a professional or technical degree in addition to that in arts.

2. Students who desire to prepare themselves for teaching. Under the modified elective system a student may specialize to a considerable extent in the particular subject which he wishes to teach and may also find time for courses in education and related subjects which are of interest to teachers generally. Such students should, however, as a rule continue their preparation in the Graduate School.

3. Students who find it necessary to devote a considerable part of their undergraduate course to specific preparation for some particular calling other than teaching. Such vocational training may be secured at present in the Household Science Course and the Courses of training for usiness including Journalism. Students regularly registered for these courses are subject to the general requirements of the College, but must meet also certain special requirements described below.

ADMISSION

Applicants for admission to the freshman class in the College of Literature and Arts must be at least sixteen years of age, and must offer credit for fifteen units of high school or other secondary school work, so chosen as to include those prescribed below. This credit can be secured by

- (a) Examination (page 22).
- (b) A certificate from a fully accredited high school (page 23).
- (c) Transfer from some other university or college (page 23).

Of the fifteen units¹ required for admission, the following are prescribed for admission to the freshman class in the College of Literature and Arts, and no substitutions are accepted:

LIST A.

Algebra	1½ units
English composition.....	1 unit
English literature.....	2 units
Geometry, plane.....	1 unit
History	1 unit
Foreign Language	3 units

In addition to the 9½ units prescribed in List A, each applicant must offer 5½ units as described below. 3½ of these units must be taken from List B, but the remaining 2 may be taken either from List B or List C. No subject is accepted for an amount less than the minimum mentioned in the list.

LIST B.

Astronomy	18 weeks	½ unit
Botany	18 or 36 weeks	½ or 1 unit
Chemistry	36 weeks	1 unit
Civics	18 or 36 weeks	½ or 1 unit
Commercial geography.....	18 weeks	½ unit
Drawing	18 or 36 weeks	½ or 1 unit
English literature (advanced) .	36 weeks.....	1 unit
French	36 to 144 weeks	1 to 4 units
Geology	18 or 36 weeks	½ or 1 unit
Geometry, solid and spherical.	18 weeks.....	½ units
German	36 to 144 weeks	1 to 4 units
Greek	36 to 144 weeks	1 to 4 units
History	36 to 144 weeks	1 to 2 units
Latin	36 to 144 weeks	1 to 4 units
Physics	36 weeks	1 unit
Physical geography ²	18 or 36 weeks	½ or 1 unit

¹ A unit is the amount of work represented by the pursuit of one preparatory subject, with the equivalent of five forty minute recitations a week, through 36 weeks; or in other words, the work of 180 recitation periods of forty minutes each, or the equivalent in laboratory or other practice.

² No student will be permitted to present more than 1 unit in geography

Physiology	18 or 36 weeks	$\frac{1}{2}$ or 1	unit
Zoology	18 or 36 weeks	$\frac{1}{2}$ or 1	unit

LIST C¹

Agriculture	36 to 72 weeks	1 to 2	units
Bookkeeping	36 weeks	1	unit
Business law	18 weeks	$\frac{1}{2}$	unit
Domestic science	36 weeks	1	unit
Economics	18 weeks	$\frac{1}{2}$	unit
Manual training ²	36 to 72 weeks	1 to 2	units

Description of subjects accepted for admission

The amount of work in each of the above subjects which corresponds to the minimum number of credits assigned, is shown by the description of the subjects below:

1. ALGEBRA.—Fundamental operations, factoring, fractions, simple equations, involution, evolution, radicals, quadratic equations and equations reducible to the quadratic form, surds, theory of exponents, and the analysis and solution of problems involving these.

2. ASTRONOMY.—In addition to a knowledge of the descriptive matter in a good text-book, there must be some practical familiarity with the geography of the heavens, with the various celestial motions, and with the positions of the conspicuous naked eye heavenly bodies.

3. BOTANY.—A familiar acquaintance is required with the general structure of plants, and of the principal organs and their functions, derived to a considerable extent from a study of the objects; also a general knowledge of the main groups of plants, and the ability to classify and name the more common species. Laboratory notebooks and herbarium collections should be presented.

4. CHEMISTRY.—The instruction must include both text-book and laboratory work. The work should be so arranged that at least one-half of the time shall be given to the laboratory. The course, as it is given in the best high schools in one year will satisfy the requirements of the University for the

¹The subjects named in List C must be taught in accordance with specifications which are set forth in the High School Manual. Further information may be had on application to the High School Inspector.

²In giving credit for Manual Training the University specifies that the work is to be done by competent teachers, as determined by inspection, and that credit shall not exceed one unit, or 360 forty-minute periods of work, including the necessary drawing and shop work.

one unit for admission. The laboratory notes, bearing the teacher's indorsement, must be presented in evidence of the actual laboratory work accomplished. Candidates for admission may be required to demonstrate their ability by laboratory tests.

5. **CIVICS.**—Such amount of study on the United States constitution, its history and interpretations, as is indicated by any of the usual high school text-books on civil government, is regarded as sufficient for one term. The work may advantageously be combined with the elements of political economy.

6. **COMMERCIAL GEOGRAPHY.**—The amount and character of the work accepted in this subject is indicated by the scope of such books as Redway's Commercial Geography, Adonis's smaller book on the same subject, the text-book of Gannett, Garrison and Houston, or Trotter's work.

7. **DRAWING.**—Free-hand or mechanical drawing, or both. Drawing-books or plates must be submitted. The number of credits allowed depends on the quantity and quality of the work submitted.

8. **ENGLISH COMPOSITION AND RHETORIC.**—Correct spelling, capitalization, punctuation, paragraphing, idiom, and definition; the elements of rhetoric. The candidate will be required to write two paragraphs of about one hundred and fifty words each to test his ability to use the English language. This work counts for one unit.

9. **ENGLISH LITERATURE.**—(a) Each candidate is expected to have read certain assigned literary masterpieces, and will be subjected to such an examination as will determine whether or not he has done so. The books assigned for the next year are as follows:

Group 1 (two books to be selected). Shakespeare: *As You Like It*, *Henry V*, *Julius Caesar*, *The Merchant of Venice*, *Twelfth Night*.

Group 2 (one book to be selected). Bacon: *Essays*. Bunyan: *The Pilgrim's Progress*, Part I. The Sir Roger de Coverley Papers in "The Spectator." Franklin: *Autobiography*.

Group 3 (one book to be selected). Chaucer: *Prologue*. Spenser: *Selections from The Færie Queene*. Pope: *The Rape of the Lock*. Goldsmith: *The Deserted Village*. Palgrave: *Golden Treasury* (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

Group 4 (two books to be selected). Goldsmith: *the Vicar of Wakefield*. Scott: *Ivanhoe*, *Quentin Durward*. Hawthorne: *The House of Seven Gables*. Thackeray: *Henry Esmond*. Gaskell:

Cranford. Dickens: *A Tale of Two Cities*. George Eliot: *Silas Marner*. Blackmore: *Lorna Doone*.

Group 5 (two books to be selected). Irving: *Sketch Book*. Lamb: *Essays of Elia*. DeQuincey: *Joan of Arc* and *The English Mail-Coach*. Carlyle: *Heroes and Hero-Worship*. Emerson: *Essays* (selected). Ruskin: *Sesame and Lilies*.

Group 6 (two books to be selected). Coleridge: *The Ancient Mariner*. Scott: *The Lady of the Lake*. Byron: *Mazeppa* and *The Prisoner of Chillon*. Palgrave: *Golden Treasury* (First Series), Book VI, with special attention to Wordsworth, Keats, and Shelley. Macaulay: *Lays of Ancient Rome*. Poe: *Poems*. Lowell: *The Vision of Sir Launfal*. Arnold: *Sohrab and Rustum*. Longfellow: *The Courtship of Miles Standish*. Tennyson: *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*. Browning: *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Evelyn Hope*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *The Boy and the Angel*, *One Word More*, *Hervé Riel*, *Pheidippides*.

(b) In addition to the above the candidate will be required to present a careful, systematic study, with supplementary reading, of the history of either English or American literature.

(c) The candidate will be examined on the form and substance of certain books in addition to those named under (a). For 1909 to 1911 the books will be selected from the list below. The examination will be of such character as to require a minute study of each of the works named, in order to pass it successfully. The list is.

Shakespeare: *Macbeth*. Milton: *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*. Burke: *Speech on Conciliation with America*; *or* *Washington: Farewell Address*, and Webster: *First Bunker Hill Oration*. Macaulay: *Life of Johnson*; *or* *Carlyle: Essay on Burns*.

The work outlined in (a), (b), (c) counts for two units.

(d) The three units in English composition, rhetoric, and literature, as described above, are required for all students. A fourth unit may be obtained for one full year's additional work in the study of English and American authors.

10. FRENCH.—*One year's work*.—The candidate must have a thorough knowledge of elementary grammar and the irregular verbs; must be able to pronounce correctly, and to translate simple spoken French phrases. He must have read some 300 pages of easy

prose, including one modern comedy, and must be able to translate ordinary French prose at sight.

Two years' work.—In addition to the above, the candidate must show proficiency in advanced grammar, the essentials of syntax, and elementary composition. The reading of not less than 400 pages of standard authors, including two plays of Molière, is required.

Three years' work.—In addition to what has already been described the candidate must have had further work in composition. He must further have read not less than 500 pages of standard authors, including Molière, La Fontaine, and Hugo. Some acquaintance with modern lyrics is necessary.

11. GEOLOGY.—The student must show familiarity with the principles of dynamic and structural geology, and some acquaintance with the facts of historical geology as presented in Scott's Introduction to Geology, Brigham's Text-book of Geology, or an equivalent, together with at least an equal amount of time spent in laboratory and field work.

The laboratory work should follow one or more of the lines indicated below, and note-books should be presented showing the character and amount of work done. *a.* Studies of natural phenomena occurring in the neighborhood, which will illustrate the principles of dynamic geology. Each study should include a careful drawing of the object, and a written description of the way in which it was produced. *b.* Studies of well-marked types of crystalline, metamorphic, and sedimentary rocks, which will enable the student to recognize each type and state clearly the conditions under which it was formed. *c.* Studies of minerals of economic values, including the characteristics of each, its origin, and the uses to which it is put. *d.* Studies of the types of soil occurring in the neighborhood, including the origin of each and the cause of differences in appearance and fertility.

12. GEOMETRY.—(a) *Plane Geometry.* Special emphasis is placed on the ability to use propositions in the solution of original numerical exercises and of supplementary theorems.

(b) *Solid and Spherical Geometry.* Applications to the solutions of original exercises are emphasized.

13. GERMAN.—*One year's work.*—Elementary grammar. Besides the work in grammar, the student should read not less than 150 pages of easy narrative, or descriptive prose.

Two years' work.—In addition to the work outlined under the one year's requirement, the pupil should know the syntax of cases, uses of the subjunctive and infinitive, complex sentence structure, use of model auxiliaries and of participial constructions. As an additional reading requirement, from 250 to 300 pages should be translated. Prose composition.

Three years' work.—The third year's study should aim to secure an easy reading knowledge of the language. Standard prose of the grade represented by Freytag, Dahn, or Keller, not less than 100 pages should be read, together with selections from the easier classic dramas. Schiller's *Wilhelm Tell*, or *Jungfrau von Orleans*.

Four years' work.—The fourth year of study should be devoted to such works as Goethe's *Iphigenie*, Tasso, *Hermann und Dorothea*, Schiller's *die Braut von Messina*, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

The statement of requirements in each subject implies the use of a substantial text-book, some elementary training in the use of reference books, and some instruction in historical geography.

14. GREEK.—To obtain one unit, the exercises in any of the beginning books, and one book of the *Anabasis*, or its equivalent, must be offered. For two units, two books of the *Anabasis* and three of Homer, or their equivalents, additional to the above, must be presented, together with an amount of Greek prose composition equal to one exercise a week for one year. For three units the following is required: three additional books of the *Iliad*, three of the *Odyssey*, and books VI, VII, VIII of Herodotus, or an equivalent from other authors.

15. HISTORY.—No subjects are definitely prescribed in this department, but the following are recommended as best adapted to the high school program:

a. For a course of one year only, the history of England and of the United States.

b. For a course of two years, the following subjects, or any two of them: The History of Greece and Rome, the History of England, the History of the United States.

c. For a course of three years, one year in each of the three subjects named in (b).

Elementary examinations will be offered in the following subjects. (a) The History of England and the United States. (b)

the History of Greece and Rome, (c) General European History. *Advanced* examinations may also be taken in any one of the subjects above named, which has not been offered to meet the elementary requirements. The examination in each of these subjects is intended to cover one full year of high school work.

16. *LATIN—First year's work.*—Such knowledge of inflections and syntax as is given in any good preparatory Latin book, together with the ability to read simple fables and stories.

Second year's work.—Four books of Cæsar's Gallic War, or its equivalent in Latin of equal difficulty. The ability to write simple Latin based on the text

Third year's work.—Six orations of Cicero. The ability to write simple Latin based on the text. The simpler historical references and the fundamental facts of Latin syntax.

Fourth year's work.—The scansion of hexameter verse, six books of Virgil, with history and mythology.

17. *MANUAL TRAINING.*—The requirement for one-half unit is the equivalent of 180 40-minute periods in manual training following the syllabus prepared by the manual training section of the high school conference. Not more than one unit will be granted in any case.

18. *PHYSICS.*—One year's high school work covering the elements of physical science as presented in the best of the current high school text-books of physics. Laboratory practice in elementary quantitative experiments should accompany the text-book work. The candidate's laboratory note-book will be considered as part of the examination.

19. *PHYSICAL GEOGRAPHY.*—The amount and character of the work required may be seen by referring to the texts of Gilbert and Brigham, or Davis; the recitations must be supplemented by at least an equal amount of time devoted to laboratory work. The laboratory exercises should follow one or more lines such as are indicated below. Each student should present a note-book showing what he has done.

(a) Studies in mathematical geography in which map and scale only are used. These should embrace such topics as length of a degree in longitude in various latitudes; length and breadth of continents, etc., in degrees and miles; relative latitude of places; distances between cities, etc., in degrees and miles; difference in

length of parallels and meridians; problems in time; location of time belts, etc.

(b) Studies of local topographic features which illustrate the various phases of stream work. Each study should include a drawing or topographic map of the object and a full, clear description of the way in which it was formed.

(c) Studies of glacial deposits as shown in terminal and ground moraines, kames, eskers, etc.; distribution of dark and light colored soils; occurrence of lakes, ponds, gravel beds, clay banks, and water-bearing strips of sand and gravel.

(d) Studies of stream work as shown in the topographical sheets which may be obtained from the United States Geological Survey at nominal cost.

(e) Studies of the form, size, direction and rate of movement of high and low barometer areas, and the relation of these to direction of wind, character of cloud, distribution of heat, and amount of moisture in the air as shown in the daily weather maps. Later these studies should lead to the making of weather maps from the data furnished by the daily papers, and to local prediction of weather changes based on the student's own observations.

(f) Studies of the climate of various countries compared with our own, the necessary data being derived from such topographic rainfall, wind, current, and temperature maps as are found in Sydow Wagner's or Longman's atlases.

20. **PHYSIOLOGY.**—For one-half unit are required the anatomy, histology, and physiology of the human body and the essentials of hygiene, taught with the aid of charts and models to the extent given in Martin's Human Body (Briefer Course). For more than one-half unit, the course must include practical laboratory work.

21. **ZOOLOGY.**—The instruction must include laboratory work equivalent to four periods a week for a half year, besides the time required for text-book and recitation work. Note-books and drawings must be presented to show the character of work done and the types of animals studied. The drawings are to be made from the objects themselves and not copied from illustrations, and the notes are to be a record of the student's own observations on the animals examined. The amount of equipment and character of surroundings must, of course, determine the nature of work done and the kind of animals studied, but in any case the student should have

at least a fairly accurate knowledge of the external anatomy of each of eight or ten animals distributed among several of the larger divisions of the animal kingdom, and should know something of their life histories and of their more obvious adaptations to environment. It is recommended that special attention be given to such facts as can be gained from a careful study of the living animal. The names of the largest divisions of the animal kingdom with their most important distinguishing characters and illustrative examples, selected, when practicable from familiar forms, ought also to be known.

(a) ADMISSION BY EXAMINATION

Each candidate for admission by examination is required to pass examinations on the subjects prescribed for the College of Literature and Arts, and on additional subjects to make a total of 15 units.

Entrance examinations are on the subjects outlined on page 15, and are given at the University in accordance with the table following. The scholarship examinations afford an opportunity to pass a part of the entrance examinations before coming to the University.

EXAMINATIONS SEPTEMBER 15 TO 18, 1909.

All persons who wish to enter the University in September, 1909, except those holding certificates of graduation from accredited schools, and scholarship certificates, and those for whom a transfer of all entrance credits from some other college or university has already been approved, must present themselves at the Registrar's office, Library Building, at 9 o'clock a. m., Wednesday, September 15. At that time application for admission will be received, and applicants will be given all necessary directions as to examinations.

(b) ADMISSION BY CERTIFICATE FROM AN ACCREDITED HIGH SCHOOL

One wishing to enter the University from an accredited school must furnish the Registrar an official certificate of his preparatory work. If the certificate meets in full the requirements for admission to the college or school in which the course which the candidate wishes to pursue is given he will be granted a permit to enter. If the certificate is deficient, either because the school is not fully accredited or because the candidate has not taken prescribed and

*The examinations in 1910 will probably be held September 14 to 17.

other acceptable work in sufficient amount, he may be admitted as a "conditioned" student, *provided* the deficiencies do not exceed two units and are not in work which should precede the prescribed courses of the first semester. The conditioned student must clear off all conditions before registering the second year.

Blank certificates and applications for admission may be had of the Registrar and should be filled and sent to him for approval before the date of registration.

(c) ADMISSION BY TRANSFER OF ENTRANCE CREDITS FROM OTHER COLLEGES OR UNIVERSITIES

A person who has been admitted to another college or university of recognized standing will be admitted to this University upon presenting a certificate of honorable dismissal from the institution from which he comes and an official statement of the subjects upon which he was admitted to such institution, provided it appears that the subjects are those required here for admission by examination, or real equivalents. The candidate should submit such papers to the Registrar before the time of entrance.

ADMISSION TO ADVANCED STANDING

After matriculation, an applicant may secure advanced standing either by examination or by transfer of credits from another college or university.

1. *By examination.*—Advanced standing is granted only by examination, unless the applicant is from a fully accredited school. In such case, credit may be obtained as explained in the next paragraph.

2. *By transfer of credits.*—Credits from another college or university, or from a fully accredited high school, may be accepted for advanced standing. An applicant for such credit must present a certified record of work done in the institution from which he comes, and except in cases of transfer from high schools, must also present a certificate of honorable dismissal.

SPECIAL STUDENTS

Persons over twenty-one years of age, *not candidates for a degree*, may be admitted to classes in the College of Literature and Arts for which they are prepared, on special application to the Dean.

Every person desiring admission as a special student in this College must present a written application, accompanied by official certificates, indicating the character and extent of his preparatory work and showing honorable dismissal from the school last attended. In order that action may be taken on such applications before registration they should be presented at least one week before the beginning of the semester. It is the policy of this College to admit as special students only a select group of mature and serious persons who, though unable to meet the formal requirements for entrance, are substantially prepared for work of college grade. Such students are not matriculated; they pay a tuition fee of seven dollars and a half a semester, in addition to the regular incidental fee of twelve dollars. No one may enroll in the University as a special student for more than two years, except upon the recommendation of the faculty of the college in which he is enrolled, and the approval of the Council of Administration.

REQUIREMENTS FOR GRADUATION

The only degree given on graduation from this College is that of Bachelor of Arts.

In order to graduate from the University in the College of Literature and Arts, the student must secure credit for 130 *hours** of study, including therein the prescribed military drill, physical training and rhetoric. Of this amount at least thirty hours must be taken in residence, in this college. Every student must take work aggregating at least eight hours of credit in each of the following groups of subjects, according to the conditions described below. The groups are:

I. English language and literature, including English and rhetoric.

II. Ancient and modern languages and literatures, including Greek, Latin, Germanic, and Romance languages.

III. The social sciences, including history, economics, political science, and sociology.

IV. Mathematics and philosophy, including mathematics, education philosophy, and psychology.

V. Science, including astronomy, botany, chemistry, geology, physiology, physics, and zoology.

* An hour is one class period a week for one semester, each class period pre-supposing two hours' preparation by the student, or the equivalent in laboratory shop, or drawing room.

CONDITIONS UNDER WHICH STUDENTS MUST MAKE THEIR CHOICE

1. In his freshman year each student must select his course of study from at least three of the five groups mentioned above, and must include in his choice six hours of rhetoric, and eight hours of some one foreign language.

2. In Group II, no credit is given for a part of the work of the beginning year of any foreign language.

3. In Group IV, a student who elects mathematics must take at least five hours of it. If a student does not elect mathematics, his election in this group must include work in at least two of the other departments of the group. That is, if he does not take mathematics he must take either philosophy and psychology, or philosophy and education, or education and psychology. With the exception of mathematics, no subject of this group is open to freshmen.

4. No credit is granted in any subject unless the student pursues it for the full time required in the shortest course offered in that subject. For example, if the student elects a course which yields two hours of credit for one semester, he must stay in the class during the semester in order to get any credit at all.

5. Every student must secure at least 24 hours of credit in some one subject to be selected by him from the list of major subjects (see page ???). This subject shall be called his major.

6. Not more than 40 hours in any one subject may be counted for graduation, excepting when a student is writing a thesis. In this case he may count, in addition to the 40 hours, the hours of the seminar course in which he does his thesis work. In the department of English a student may take 40 hours in addition to Rhetoric I.

7. Students who are candidates for special honors must write theses. Students not candidates for special honors may also write theses, on the approval of the head of the department in which they are doing their major work.

8. Students who hold scholarships in household science must make this subject their major. A suggested course in Household Administration is described on pp 000 below. Household Science students who do not take that course must meet the following requirements:

They must elect each semester at least four hours in household science, or in subjects required for admission to the household

science courses. In their freshman year they must elect the following:

First Semester: Physical Training 7, Physiology 6, Rhetoric 1, Foreign Language, Chemistry 1, Household Science 2.

Second Semester: Physical Training 7, Rhetoric 1, Foreign Language, Household Science 1, Chemistry 2 and 3.

They must then elect in regular course and finish by the end of the junior year, Botany 5, Chemistry 13a, 9, and 9c, and an additional five hours in botany or zoology. In order to graduate, household science students must also secure credit for Art and Design 1, Architecture 41 (Color Problems), Architecture 29a and 29b (History of Architecture), and Economics 1.

Students in household science must also satisfy the requirements for graduation in the College of Literature and Arts, in so far as these are not covered by the courses above mentioned.

9. Students in the business courses must make economics their major subject. They must supplement the economics with the necessary work in science, materials of commerce, mechanical technology, language, and law, and should follow closely the outlines of the various courses given in full in the special circular on *Courses of Training for Business*.

ELECTIVES

A student may select his studies from as wide a range of subjects as he pleases, restricted only by the requirements that he shall take the minimum amount of work in each of the groups mentioned on page 23, and secure at least 24 hours in some one subject. The special requirements for a major in English or in modern languages are indicated below.

In planning a course of study attention should be given to the sequence of courses in the various departments. Students in upper classes should elect distinctly advanced courses. The following rule is now in force:

Seniors who register in courses open to freshmen shall receive only one-half of the credit regularly assigned to such courses, unless they have done a sufficient amount of special work to entitle them to full credit. In the latter case the instructor shall certify to the Dean that the special work has been done.

Senior students of high standing are urged to present theses written in connection with courses offered by the various departments in which they are doing their major work. The writing of theses in connection with such courses is required of all candidates for special honors. For regulations regarding honors, see page 00

The departments in which major work may be done are listed as major electives below. If the student receives less than 24 'hours' credit in one of these subjects, it is credited to him as minor work, as is also any subject not there listed, regardless of the time spent on it.

The elective minor courses open to the students of the College include subjects offered in the other colleges and schools of the University. The natural sciences especially are so important a part of a liberal education that every student of the College is earnestly urged to extend his study to them as far as may be.

Certain courses in the College of Engineering, in the College of Agriculture, in the School of Library Science, and in the College of Law, may also be counted for credit in the College of Literature and Arts. These are more particularly mentioned under Minor Electives below. Courses not so mentioned may not be so counted, without the approval of the Dean.

MAJOR ELECTIVES

The following subjects may be elected as majors in the College of Literature and Arts:

Education	Latin
Economics	Household Science
English (including English Literature and Rhetoric) ¹	Mathematics
French ²	Philosophy
Greek	Political Science
German ³	Sociology
History	Psychology

MINOR ELECTIVES

The credits necessary for graduation, additional to those ob-

¹A major in English must include 24 hours in addition to English 1 and Rhetoric 1. Of these 24 hours at least 8 must be in English literature and at least 4 in rhetoric.

²A major in French must include 24 hours in addition to French 1.

³A major in German must include 24 hours in addition to German 1 and 3.

tained in the prescribed subjects and the chosen major electives, may be secured from any subjects offered in the University which are approved *for this purpose* by the Dean of the College. In the department of Art and Design, not more than 20 hours may be counted for the degree of bachelor of arts.

The following subjects in other colleges and schools of the University may also be taken as minors:

Library Science: The following courses are counted for credit in the College of Literature and Arts: History of Libraries (Lib. 7); Book-making (Lib. 9) General Reference (Lib. 12); Public Documents (Lib. 13); Library Extension (Lib. 14). The total credit allowed in Library Science will not ordinarily exceed 14 hours. The course in General Reference (Lib. 12) is of special value to students in the College of Literature and Arts.

Music: History of Music (Mus. 1).

Physical Training: Credit in Physical Training may be counted for the degree of A. B. for an amount not exceeding five semester hours.

For courses in the College of Law, see page 00

Certain other courses offered in the Colleges of Engineering and Agriculture may also be taken, subject to the approval of the Dean and the instructors concerned.

COURSES OF INSTRUCTION

FIRST YEAR

Fifteen to eighteen hours a week, including rhetoric and some foreign language, must be chosen each semester. Every freshman student must include in his course of study at least three of the five groups mentioned on page 24.

Military science and tactics are required of all male students. Drill extends through the freshman and sophomore years, and tactics through the second semester of the freshman year. This requirement applies also to first year special students.

Physical training is required of all freshmen, men and women, two hours for men and three hours for women.

The following subjects are open to freshmen:

First Semester—

Art and Design 1.

English Literature and Rhetoric: English 1; Rhetoric 1, 7.

Foreign Language: French 1 or 2; German 1 (for beginners only) or 4; Greek 1 (for those who have not before studied Greek); Greek 5 (for those offering entrance units in Greek); Italian 1; Latin 1 (for those offering 3 units for entrance); Latin 2 (for those offering 4 units for entrance); Spanish 1.

History and Political Science: History 1; Economics 7 and 26.

Household Science 2.

Library Science 12.

Mathematics 2 and 4.

Science: Astronomy 1; Botany 2, 4, and 11; Chemistry 1a; Zoology 10.

Military 2.

Physical Training 1 and 3 for men; 7 and 9 (Physiology 6) for women.

Second Semester—

Art and Design 1, 2.

Englisch Literature and Rhetoric: English 2; Rhetoric 1, 7.

Foreign Language: French 1 or 2; German 3, 5 or 6; Greek 2 (after Greek 1); Greek 6 (after Greek 5); Italian 1; Latin 1, 2, and 13; Spanish 1.

History and Political Science: History 1 continued and 11; Economics 22 and 26.

Household Science 1.

Mathematics 6.

Science: Astronomy 4; Botany 1 and 17; Chemistry 1, 2, and 3; Physical Geography (Geology 8); Geology 10; Zoölogy 2, 10 and 17f.

Military 1 and 2.

Physical Training: 1 and 3 for men; 7 for women.

The work of the remaining years is elective, but the elections must include the necessary number of hours from each group as specified on pages 24.

COURSES IN BUSINESS ADMINISTRATION

Courses in economics, accounting, commerce, railway administration, and industry are offered in combination with courses in language, law, science, and mechanical technology, with the aim of providing a university training for business life. The combined

courses are designed to give the student a knowledge of the general principles that underlie all lines of business, with special training in the work of some particular calling.

ARRANGEMENT OF COURSES

The subjects of study are so arranged as to furnish training for (1) general business, (2) the consular service, (3) banking, (4) insurance, (5) accounting, (6) railway traffic and accounting, (7) railway transportation, (8) newspaper work.

The work of the class-room is supplemented with lectures by practical specialists, and with visits of inspection to industrial and mercantile establishments.

The outlines for the General Business Course, the courses in Railway Administration, and the Course in Journalism are given below. *A detailed description of the other courses, together with a full account of the library and other facilities for the work is given in separate circulars, which may be had on application to the Registrar.*

GENERAL BUSINESS COURSE

This course is intended for students who wish to get a general knowledge of modern business organization and methods and their relation to the public welfare, without specializing in the details of any particular business. Every student must take 15-18 classes per week. Students desiring mathematics, or taking courses requiring it, should elect it the first year, omitting Economic Resources (Economics 26), or Economic History of the United States (Economics 22), and Science which may then be elected the second year. Economic Resources (Economics 26) is repeated the second semester.

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1, 3)
Economic Resources (Commec.
Geog., Econ. 26)
Eng. Econ. Hist. (Econ. 7) or
Mathematics (Math. 2, 4) or
Science

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1, 3)
Econ. Hist. U. S. (Econ. 22)
Mathematics (Math. 6) or
Science

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Econ. (Econ. 1)
 Amer. Fed'l Gov't (Pol. Sci. 1)
 Military (Mil. 2)
 History of U. S. (Hist. 3) or
 European History (Hist. 1)

Suggested Electives:

Foreign Language continued
 Mathematics
 Science

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
 Business Writing (Rhet. 10)
 Military (Mil. 2)
 Amer. State Gov't (Pol. Sci. 3)
 History of U. S. (Hist. 3) or
 European History (Hist. 1)

Suggested Electives:

Foreign Language continued
 Mathematics
 Science

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
 Corpor. Man. (Econ. 10)
 Domestic Commerce (Econ. 28) or
 The Tariff (Econ. 30)

Suggested Electives:

History
 Public Finance (Econ. 5)
 Foreign Language continued
 Accounting (Acc'y 2)
 R'y Hist. and Orgn. (Econ. 41)
 Fed'l Constitution (Pol. Sci. 5)
 Psychology (Psychol. 1)

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
 Foreign Commerce (Econ. 29) or
 Organization of Ocean Commerce
 (Econ. 36) or
 U. S. Commc. Relations (Econ. 31)
 Municipal Gov't (Pol. Sci. 4)

Suggested Electives:

History
 Indus. Consolid. (Econ. 11)
 Foreign Language continued
 Accounting (Acc'y 3)
 R'y Administration (Econ. 42)
 Logic (Phil. 1b)
 Psychology (Psychol. 1)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Seminary (Econ. 18)
 Labor Problems (Econ. 12)
 Pol. and Soc. Ethics (Phil. 9)
 Mechanical Technol. (M. E. 30)
 Evolut. of Indus. Soc. (Econ. 13)

Suggested Electives:

Fin. Hist. of U. S. (Econ. 4)
 (See also third year electives)

SECOND SEMESTER

Prescribed Subjects:

Seminary (Econ. 18)
 Labor Problems (Econ. 12)
 Commercial Law (Law B)
 Mechanical Technol. (M. E. 31)
 Evolut. of Indus. Soc. (Econ. 13.)

Suggested Electives:

Social Reform (Econ. 21)
 (See also third year electives)

COURSE FOR THE CONSULAR SERVICE

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
 Rhetoric (Rhet. 1)
 Military
 Physical Training
 Economic Resources (Commerc. Geog.
 Econ. 26)
 English Econ. Hist. (Econ. 7)
 European Hist. (Hist. 1)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
 Rhetoric (Rhet. 1)
 Military
 Physical Training
 Econ. Hist. of U. S. (Econ. 22)
 European Hist. (Hist. 1)

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Economics (Econ. 1)
 Foreign Language continued
 American Fed'l Gov't. (Pol. Sci. 1)
 Science
 Military

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
 Foreign Language continued
 American State Gov't (Pol. Sci. 3)
 Science
 Business Writing (Rhet. 10)
 Military

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Domestic Commerce (Econ. 28) or
The Tariff and Custom Regulations
(Econ. 30)
Foreign Language continued
Psychology (Psychol. 1)
European Gov'ts (Pol. Sci. 2)
History of U. S. (Hist. 3)
Accounting (Acc'y 1)

SECOND SEMESTER

Prescribed Subjects:

Foreign Commerce (Econ. 29) or
Organization of Ocean Commerce
(Econ. 36)
Foreign Language continued
Psychology (Psychol. 1)
International Law (Pol. Sci. 6)
History of U. S. (Hist. 3)
Accounting (Acc'y 1)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language continued
American Diplomacy (Pol. Sci. 7)
Public Finance (Econ. 5)
Pol. and Soc. Ethics (Phil. 9)
Seminary (Econ. 18)

Suggested Electives:

Hist. of Latin America and the Phil-
ippines (Hist. 27)
Evolut. of Indus. Soc. (Econ. 13)
Corpor. Man. (Econ. 10)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language continued
Consular and Diplom. Service (Econ.
35) or
Commercial Relations (Econ. 31)
Commercial Law (Law B)
Seminary (Econ. 18)

Suggested Electives:

Hist. of Latin America and the Phil-
ippines (Hist. 27)
Evolut. of Indus. Soc. (Econ. 13)
Europe in 19th Cent. (Hist. 20)

COURSE IN BANKING

The work of the first and second years is the same as in the General Business Course, but students must take advanced algebra (Mathematics 2) which is a prerequisite for the mathematics of investments (Mathematics 23a).

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
Corpor. Man. (Econ. 10)
Public Finance (Econ. 5)

Suggested Electives:

Accounting (Acc'y 2)
Domestic Commerce (Econ. 28)
Psychology (Psychol. 1)
Logic (Phil. 1)
History

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
Math. of Investments (Math. 23a)
Municipal Gov't (Pol. Sci. 4)

Suggested Electives:

Accounting (Acc'y 3)
Foreign Commerce (Econ. 27)
Psychology (Psychol. 1)
Indus. Consolid. (Econ. 11)
History

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Practical Banking (Econ. 9)
Fin. Hist. of U. S. (Econ. 4)
Pol. and Soc. Ethics (Phil. 9)
Seminary (Econ. 18)

Suggested Electives:

Labor Problem (Econ. 12)
The Tariff (Econ. 30)
Contracts (Law 1)
Evolut. of Indust. Soc. (Econ. 13)

SECOND SEMESTER

Prescribed Subjects:

The Money Market (Econ. 8)
Commercial Law (Law B)
Seminary (Econ. 18)

Suggested Electives:

Labor Problem (Econ. 12)
U. S. Commercial Relations (Econ. 31)
Contracts (Law 1)
Evolut. of Indust. Soc. (Econ. 13)

COURSES IN RAILWAY ADMINISTRATION

There are two courses offered under this head, one emphasizing those subjects which are of most value to the student interested in the accounting and traffic aspects of railway work, the other laying stress upon the transportation service, properly so called, and intended to prepare men directly for the transportation departments of our railways.

RAILWAY TRAFFIC AND ACCOUNTING

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1, 3)
Algebra and Trig. (Math. 2, 4)
Economic Resources (Commerc. Geog., Econ. 26)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1, 3)
Anal. Geom. (Math. 6)
Econ. Hist. of U. S. (Econ. 22)

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Econ. (Econ. 1)
Calculus (Math. 8a)
Physics (Phys. 1, 3)
Military (Mil. 2)

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
Business Writing (Rhet. 10)
Physics (Phys. 1, 3)
Military (Mil. 2)
History of U. S. (Hist. 3)
Amer. State Gov't (Pol. Sci. 3)

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1, 2)
Corpor. Man. (Econ. 10)
R'y Hist. and Organ. (Econ. 41)
History of U. S. (Hist. 3)
Traffic Admin. (Econ. 43)
Labor Problems (Econ. 12)

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1, 3)
Indus. Consolid. (Econ. 11)
R'y Administration (Econ. 42)
Math. of Investments (Math. 23a)
R'y Transportation (Econ. 44)
Labor Problems (Econ. 12)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 4, 5)
R'y Practice (Econ. 45)
Sem. in R'y Admin. (Econ. 18)
Pol. and Soc. Ethics (Phil. 9)
Suggested Electives:
Amer. Fed'l Gov't (Pol. Sci. 1)
Fed'l Constitution (Pol. Sci. 5)

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 4, 6)
Foreign R'y Systems (Econ. 47)
Sem. in R'y Admin. (Econ. 18)
Commercial Law (Law B)
Suggested Electives:
Political Philosophy (Phil. 5)
Municipal Gov't (Pol. Sci. 4)

RAILWAY TRANSPORTATION

In addition to the prescribed subjects in this course other subjects may be elected where opportunity offers, but six hours of

such elections must be from history, political science, more advanced language, or ethics.

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1, 3)
Gen. Engin. Drawing (G. E. D. 1)
Algebra and Trig. (Math. 2, 4)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1, 3)
Descriptive Geom. (G. E. D. 2)
Anal. Geom. (Math. 6)

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Econ. (Econ. 1)
Calculus (Math. 7)
Physics (Phys. 1, 3)
Military (Mil. 2)

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
Calculus (Math. 9)
Physics (Phys. 1, 3)
Military (Mil. 2)
Anal. Mech. (T. and A. M. 7)

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Corpor. Man. (Econ. 10)
R'y Hist. and Organ. (Econ. 41)
Traffic Admin. (Econ. 43)
Anal. Mech. and Resist. of Materials
(T. and A. M. 8, 9)
Inorganic Chem. (Chem. 1b)

SECOND SEMESTER

Prescribed Subjects:

Business Writing (Rhet. 10)
R'y Administration (Econ. 42)
R'y Transportation (Econ. 44)
Mech. Engin. Lab. (M. E. 13)
Electrical Engin. (E. E. 1)
Surveying (C. E. 10)
Graphic Statics (C. E. 20)
Engines and Boilers (M. E. 11)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

R'y Practice (Econ. 45)
Sem. in R'y Admin. (Econ. 18)
Accounting (Acc'y 1)
Labor Problems (Econ. 12)
Elec. Engin. Lab. (E. E. 21)
Locomotives (R'y E. 1)
Engin. Materials (T. and A. M. 6)

SECOND SEMESTER

Prescribed Subjects:

Foreign R'y Systems (Econ. 47)
Sem. in R'y Admin. (Econ. 18)
Accounting (Acc'y 1)
Labor Problems (Econ. 12)
R'y Tests (R'y E. 11)
Commercial Law (Law B)

COURSE IN JOURNALISM

FIRST YEAR

FIRST SEMESTER

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1, 3)
European History (Hist. 1)
Engl. Literature (Engl. 1)

SECOND SEMESTER

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1, 3)
European Hist. (Hist. 1)
Engl. Literature (Engl. 2)

SECOND YEAR

FIRST SEMESTER

Rhetoric (Rhet. 3 or 20)
 Principles of Economics (Econ. 1)
 Amer. Fed'l Gov't (Pol. Sci. 1)
 Military (Mil. 2)
 Science

SECOND SEMESTER

Rhetoric (Rhet. 3 or 20)
 Money and Banking (Econ. 3)
 Amer. State Gov't (Pol. Sci. 3)
 Military (Mil. 2)
 Science
 Business Writing (Rhet. 10)

THIRD YEAR

FIRST SEMESTER

Newspaper Writing (Rhet. 12)
 History of U. S. (Hist. 3)
 Fed'l Constitution (Pol. Sci. 5)
 Psychology (Psychol. 1)
 Corpor. Man. and Fin. (Econ. 10) or
 Domestic Commerce (Econ. 28)
 English Literature

SECOND SEMESTER

Newspaper Writing (Rhet. 12)
 History of U. S. (Hist. 3)
 Municipal Gov't (Pol. Sci. 4)
 Psychology (Psychol. 7)
 Indust. Consolid. (Econ. 11) or
 Foreign Commerce (Econ. 28)
 English Literature

FOURTH YEAR

FIRST SEMESTER

Advanced Newsp. Writ. (Rhet. 15)
 Editorial Management (Rhet. 22)
 Pol. and Soc. Ethics (Phil. 9)
 General Sociology (Sociol. 1)
 Labor Problems (Econ. 12) or
 Public Finance (Econ. 5)
 American Diplomacy (Pol. Sci. 7)
 European Gov'ts (Pol. Sci. 2)

SECOND SEMESTER

Advanced Newsp. Writ. (Rhet. 15)
 Lectures on Newspaper Organization
 and Management
 Social Reform (Econ. 21)
 Social Control (Sociol. 2)
 Labor Problems (Econ. 12) or
 American History (Hist. 22) or
 Charities and Corrections (Sociol. 5) or
 Europe in 19th Cent. (Hist. 20)
 International Law (Pol. Sci. 6)

SUGGESTED COURSE IN HOUSEHOLD ADMINISTRATION

FIRST YEAR

FIRST SEMESTER

Rhetoric and Themes (Rhet. 1)
 Free Hand Drawing (Art. & D. 1)
 Home Architecture & Sanitation,
 (Household Science 2)
 Foreign Language
 Physical Training
 Hygiene (Physiology 6)
 English 1 (Introductory Course: Eng-
 lish Literature before the 19th Cen-
 tury)

SECOND SEMESTER

Rhetoric & Themes (Rhet. 1)
 Applied Design (Art & Design 12)
 Foreign Language
 Physical Training
 Introductory Zoology (Zool. 10)

SECOND YEAR

FIRST SEMESTER

Color Problems (Arch. 41)
 Short History of Architecture (Arch.
 29a)
 Foreign Language or History 4 or
 Textiles (H. Science 7)
 Inorganic Chemistry (Chem. 1)

SECOND SEMESTER

Foreign Language or History (Con-
 tinued)
 Principles of the Selection and Pre-
 paration of Food (H. Sci. 1)
 History of the U. S. (History 3)

Suggested Electives:

Inorganic Chemistry (Chem. 2)
 Qualitative Analysis (Chem. 3)
 History
 Modern Philosophy (Phil. 4)

THIRD YEAR

FIRST SEMESTER

Economic Uses of Food. (H. Sci. 6)
 Elementary Psychology (Psych. 1)
 Physiology 4 (Minor Course)
 Economics 1

SECOND SEMESTER

Dietetics (H. Science 5)
 Elementary Home Decoration (H. Science 3)
 Household Art & Clothing (H. Science 12)
 Elementary Psychology (Psych. 7)
 Economics of the Family (H. Sci. 15)

FOURTH YEAR

FIRST SEMESTER

Household Management (H. Science 10)
 History of Home Economics (Household Science 15)
 Principles of Accounting (Accountancy 1)
 Economics of the Family (H. Sci. 16)*
 Ethics (Philosophy 7)
 Sociology 1

Suggested Electives:

Sanitary Analysis (Chem. 10a)
 Principles of Education (Edu. 1)
 Comparative & Genetic Sociology (Soc. 3)
 Vertebrate Embryology (Zool. 3)
 Philosophy 8

SECOND SEMESTER

Principles of Accounting (Accountancy 1)
 Commercial Law (Law B)
 Economics of the Family, continued (Household Science 16)*
 Ethics (Philosophy 7)

Suggested Electives:

History & Criticism of Art (Architecture 29b)
 Food Analysis (Chem. 5c)
 Social Phases of Edu. (Edu. 16)
 Charities, Corrections, and Urban Problems (Soc. 5)
 Physiological Psychology (Psych. 9)
 Vertebrate Embryology (Zool. 3)

*Household Science 16 consists of problems in the economics of the family. See Economics 18. Dean Kinley.

LEGAL STUDY AND COLLEGE WORK

By the proper selection of his studies it is possible for a prospective law student to take both his degree in arts and his degree in law in six years, and a strong student may be able to take his bachelor's degree in arts at the close of his first year in the College of Law. The following courses in the College of Law, not exceeding a total of 17 hours, may be counted for the degree of bachelor of arts; Law 1 (Contracts); Law 2 (Torts; Law 3 (Real Property); Law 6 (Personal Property). Some of these courses, not exceeding 9 hours, may, by special permission of the Dean, be taken in the junior year. If the student is also a candidate for the degree of LL. B., he should in his fourth year register in the College of Law and pay the regular fee in the College of Law.

Students are not permitted to take this law work until their junior year.

A fee of five dollars is charged for every law subject, taken by students who do not pay the regular law school fee.

Students from other colleges who wish to avail themselves of this privilege must do at least thirty hours work in residence in subjects offered by the Faculty of the College of Literature and Arts.

SUGGESTED COURSES PRELIMINARY TO LAW

In the following list the subjects specifically prescribed for graduation in the College of Literature and Arts are indicated by italics. Every student must meet the general college requirements for graduation as stated above, p. 24, and except by special permission must take each semester not less than fifteen nor more than eighteen semester hours. In other respects the course is wholly elective.

FIRST YEAR

FIRST SEMESTER

Military 2
Physical Training 1 and 3
Foreign Language
Rhetoric 1
 Continental European History (Hist. 1)
Science 2

SECOND SEMESTER

Military 1 and 2
Pyhsica raining 1 and 3
Rhetoric 1
 Continental European History (Hist. 1)
Science
Foreign Language

SECOND YEAR

FIRST SEMESTER

Military 2
 American Government (Pol. Sci. 1)
 History of the United States to 1789 (Hist. 3)
 Principles of Economics (Econ. 1)
 Foreign Language
 Psychology 1
 English Literature before the Nineteenth Century (Engl. 1)
 Logic (Philos. 1)
 American Literature (Engl. 16)

SECOND SEMESTER

Military 2
 American State Government (Pol. Sci. 3)
 Money and Banking (Econ. 3)
 Foreign Language
 Public Speaking (Rhet. 7)
 English Literature in the Nineteenth Century (Engl. 2)
 History of Europe in the Nineteenth Century (Hist. 20)
 History of the United States after 1789 (Hist. 3)

THIRD YEAR

FIRST SEMESTER

Constitutional History of England (Hist. 4)
 Intercollegiate Debating (Rhet. 13)
 Corporation Management (Econ. 10)
 Principles of Accounting (Accountancy 1)
 Making of the Federal Constitution (Hist. 14)
 English Literature, 3 hours
 Public Finance (Econ. 5)
 Extempore Speaking (Rhet. 5a)
 History of Illinois (Hist. 17)
 General Sociology (Sociol. 1)
 The Law of Taxation (Pol. Sci. 8)

SECOND SEMESTER

Constitutional History of England (Hist. 4)
 Principles of Accounting (Accountancy 1)
 Elements of Jurisprudence (Pol. Sci. 9)
 Elements of Administrative Law (Pol. Sci. 10)
 Charities and Corrections (Sociol. 5)
 Municipal Government (Pol. Sci. 4)
 Industrial Consolidations (Econ. 11)
 Intercollegiate Debating (Rhet. 13)
 English Literature 3 hours
 Political Philosophy (Philos. 5)

FOURTH YEAR

FIRST SEMESTER

Contracts (Law 1)
 Torts (Law 2)
 Personal Property (Law 6)
 Labor Problems (Econ. 12)
 Railway Organization and History (Econ. 41)
 Economics of Insurance (Econ. 33)
 Political and Social Ethics (Philos. 9)
 Financial History of the United States (Econ. 4)

SECOND SEMESTER

Contracts (Law 1)
 Torts (Law 2)
 Real Property (Law 3)
 International Law (Pol. Sci. 6)
 History of the Civil War and Reconstruction Periods (Hist. 15)
 Railway Administration (Econ. 42)

COMBINED ARTS AND ENGINEERING COURSE

A graduate of the College of Literature and Arts, whose mathematical training includes the work of the calculus, who has had the usual college course in physics, and who has had sufficient training in the principles of mechanics to enable him to begin the mechanics of the junior year, may receive the degree of Bachelor of Science in the departments of the College of Engineering upon the completion of sixty-eight semester hours' work in such lines (including thesis) as may be directed by the Faculty. This work may ordinarily be done in two academic years. Candidates for the degree in the department of Architecture are not required to be prepared in calculus or mechanics, but should possess special preparation in drawing.

A limited number of courses in the College of Engineering, selected from the following list, may be counted for the degree of Bachelor of Arts:

General Engineering Drawing 1 and 2 (Mechanical Drawing and Descriptive Geometry); Theoretical and Applied Mechanics 7 and 8; Mechanical Engineering 7 or 15 (Thermodynamics); Civil Engineering 10 or 21 (Surveying); Architecture 6 (History of Architecture); Architecture 8 (Orders of Architecture); Architecture 29a (History of Architecture); Architecture 29b (History and Criticism of Art); Electrical Engineering 1 and 21, or 2 and 26 (Principles).

UNIVERSITY HONORS

The University gives public official recognition to such students as attain a high grade of scholarship, by the following system of honors.

Preliminary Honors are assigned on the completion of the sophomore year, on the basis of the scholarship of the student during the freshman and sophomore years. A condition or a failure disqualifies a student for receiving these honors.

Final Honors are assigned on graduation. The basis for the assignment is the scholarship of the student during the junior and senior years. A condition or a failure received in the junior or senior year disqualifies a student for receiving final honors.

Special Honors are awarded at the close of the senior year. Special honors are planned for especially brilliant students who pre-

fer to concentrate their efforts upon a special course. A student may be a recipient of both final and special honors. No student is eligible for special honors, who, during the period in which he is a candidate for the same, has received a grade of less than eighty-five per cent in any subject.

The names of all students receiving honors appear in the University catalog.

HONORARY SOCIETIES

Phi Delta Kappa Society.—Each year a certain number of the ranking students of the senior class are elected to membership in the Phi Beta Kappa Society. The number is ordinarily limited to one-sixth of the total membership of the graduating class.

Sigma Xi.—Members of the senior class in the College of Literature and Arts who give "promise of marked ability" in scientific investigation are also eligible to membership in the Sigma Xi Society, which was founded to encourage research in pure and applied science.

CONTESTS AND PRIZES

MILITARY DECORATIONS

Bronze medals typical of the University and its Military Department are awarded by the University to the members of the Infantry Company, Artillery and Signal Detachments which shall score the greatest number of points at the annual competitive drill. The members of the company rifle team making the highest score at gallery target practice are also awarded medals. The medals so awarded become the permanent property of recipients. A complete roster of the winning organizations is published in the University catalog for the following year.

THE HAZLETON PRIZE MEDAL

Captain W. C. Hazleton provided in 1890 a medal, which is awarded at a competitive drill held near the close of the year, to the best drilled student. Each competitor must have been in attendance at the University at least sixteen weeks of the current college year; must not have had more than four unexcused absences from drill; and must present himself for competition in full uniform.

The award is made for excellence in:

1. Erectness of carriage, military appearance, and neatness.
2. Execution of the school of the soldier, without arms.
3. Manual of arms, with and without numbers.

The name of the successful competitor is published in the University catalog for the following year. He is given a certificate setting forth the facts, and may wear the medal until the 15th day of May following, when he must return it for the next competition.

UNIVERSITY GOLD MEDAL

In 1908 the Board of Trustees voted to award a University Gold Medal to the winner of the annual individual competitive military drill, under the following conditions:

1. That the cadet shall have completed one semester's work in Military 1, with a grade of not less than 90 per cent, and three semesters' work in Military 2, with a grade of not less than ninety-five per cent.
2. That the cadet shall be matriculated in the University of Illinois and that he shall have obtained an average grade of 85 per cent in his studies other than military, which standing shall be determined by the Council of Administration.
3. That the required credit in Military 1 and Military 2 shall have been obtained at this University.

ORATORICAL CONTESTS

THE STATE UNIVERSITY DEBATING LEAGUE consists of the state universities of Illinois, Indiana, and Ohio. Under its auspices three debates are held upon the second Friday in March, each university sending out an affirmative and a negative team of three speakers each. At this University the teams are chosen in a series of competitive preliminaries to which all students are eligible.

THE CENTRAL DEBATING CIRCUIT OF AMERICA is an association formed by the universities of Illinois, Iowa, Minnesota, Nebraska, and Wisconsin. It holds a debate at each university on the Friday evening next preceding the opening of the holiday recess. The teams are selected for these debates in the same way as that described above. In 1908-9 Illinois met Minnesota and Nebraska.

THE ILLINOIS COLLEGE AND UNIVERSITY SUFFRAGE CONTEST, endowed by Mrs. Elmina E. Springer, is held under the auspices of

the Illinois Equal Suffrage Association. It is open to one representative from any institution of collegiate rank within the state. First and second testimonials of one hundred dollars and fifty dollars, respectively, are awarded. The local contest is open to any student who has been in attendance here at least one full year, and who is a candidate for a Bachelor's or a Master's degree.

A FRESHMAN-SOPHOMORE DEBATE and an INTER-SOCIETY DECLAMATION CONTEST are held under the management of the Oratorical Association.

THE BRYAN PRIZE

In 1898 Mr. William Jennings Bryan gave to the University two hundred and fifty dollars. From the interest of this sum a prize of twenty-five dollars is offered biennially for the best essay on science of government. The contest is open to all matriculated undergraduate students. The essays may not be less than three thousand, nor more than six thousand, words in length, and must be left at the President's office not later than the second Wednesday in May. The prize was offered for the first time in 1901 and will be next open for competition in 1911.

SCHOLARSHIPS

COUNTY SCHOLARSHIPS

A law passed by the General Assembly of the State of Illinois at the session of 1905 provides that there may be awarded annually to each county of the state one scholarship. The holder thereof must be at least sixteen years of age, and a resident of the county to which he is accredited. He is entitled to free tuition in other than the preparatory and professional schools of the University.

A competitive examination under the direction of the President of the University is held at the county court house in each county of the state upon the first Saturday of June in each year by the county superintendent of schools upon such branches of study as the President of the University may deem best. Questions for such examinations are furnished to the county superintendents of schools prior to such examinations.

Having passed the examination successfully the candidate must then meet in full the requirements for admission to the freshman class and register the following September.

In case the scholarship in any county is not claimed by a resident of that county the President of the University may fill the same by appointing some candidate, resident of another county, who is eligible therefor.

A student holding a scholarship who shall make it appear to the satisfaction of the President of the University that he requires leave of absence for the purpose of earning funds to defray his expenses while in attendance, may, in the discretion of the President, be granted such a leave of absence, and may be allowed an extension of his scholarship for a period not exceeding six years from the commencement thereof.

The examination is held the first Saturday in June of each year.

Any person, whether a candidate for a scholarship or not, may be examined for admission to the University at this scholarship examination.

GENERAL ASSEMBLY SCHOLARSHIPS

The same act by which the county scholarships described above were established also provides that each member of the General Assembly may nominate annually one eligible person from his district for a scholarship in the University granting the same privilege as the county scholarships, and to be conferred under the same conditions with regard to examination, entrance requirements, and registration.

SCHOLARSHIPS IN HOUSEHOLD SCIENCE

The University offers every year to each county in the state, except Cook and Lake, and to each of the first ten congressional districts, one scholarship for prospective students of Household Science.

Appointments are made by the Trustees of the University to scholarships in Household Science upon the recommendation of the County Domestic Science Association. Young women under eighteen years of age and those who have already attended the University are not eligible. Acceptable candidates, residents of counties or districts for which appointments have been made, may be assigned to counties or districts not yet represented.

The scholarships are good for two years and relieve the hold-

ers from the payment of the matriculation fee, \$10.00, and the incidental fee, \$24.00 a year. The term of a scholarship may be extended four years, if, before it expires, the holder satisfies in full the requirements for admission to the freshmen class of the college in which she is enrolled.

MILITARY SCHOLARSHIPS

Students who have gained three hours in class room military instruction and four in drill practice, are eligible for appointment as commissioned officers of the regiment or battery. Those attaining this rank may be awarded special scholarships, good for one year, and equal in value to the University incidental fees for the same length of time.

BENEFICIARY AID

EDWARD SNYDER DEPARTMENT OF STUDENTS' AID

In 1899 Edward Snyder, Professor of the German language and literature, *emeritus*, gave the University the sum of \$12,000, to be lent to worthy students to enable them to finish their courses in the University. This fund is available for junior, senior, and graduate students who need aid to remain and complete their work. The minimum loan made is fifty dollars, and the maximum loan is one hundred and fifty dollars to a junior, and two hundred dollars to a senior or graduate student.

Applications for loans must be made in writing and addressed to Vice-President T. J. Burrill, Chairman Loan Fund Committee.

CLASS OF 1895 LOAN FUND.

This is a fund of \$100.00 established by the class of 1895, to be lent to needy and deserving students. According to the conditions of the gift, fifty dollars are to be lent annually, and the benefit of the fund is open only to students who, at the time of application, are members of the freshman class. No person may receive the benefit of the fund more than four years. The loan bears interest from the time the recipient leaves the University, and is due, one-half in five years, and one-half in six years, after matriculation. The management of the fund is in charge of the Council of Administration.

EXPENSES

FEES

All fees shall be paid each semester in advance.

Literary, Technological, Scientific and Agricultural Departments

MATRICULATION FEE. Each student not holding a scholarship, upon satisfying the requirements for admission to the University, pays the matriculation fee of.....\$10.00

DIPLOMA FEE, payable before graduation, is..... 5.00

INCIDENTAL FEE. All students, except those holding scholarships, pay, each semester, an incidental fee of.....12.00

TUITION FEE. Students "conditioned" on entrance requirements, and "special" students, except special students holding scholarships, pay each semester, a tuition fee of...7.50

No deduction is made on account of absence in any course, except in case of protracted illness.

LABORATORY FEES AND DEPOSITS. Each student working in laboratories, or in the drafting or engineering classes, is required to make a deposit varying from 50 cents to \$10.00, to pay for chemicals and apparatus used, and for any breakages or damage.

AVERAGE ANNUAL EXPENSES

The following are for students attending at Urbana, estimated average annual expenses, *exclusive* of books, clothing, railroad fare, laboratory fees, if any, and small miscellaneous needs:

Semester fees	\$24.00 to	\$24.00
Room rent for each student (two in room)	36.00 to	72.00
Table board in boarding houses and clubs	126.00 to	1.44.00
Washing.....	18.00 to	24.00
Total	\$204.00 to	264.00
Board and room in private houses, a week.....	4.50 to	6.00

In addition to the above, freshmen pay a matriculation fee of \$10.00, and the men are required to buy a cadet uniform, which costs \$15.00. Other necessary expenses will need to be taken into consideration. Six hundred and twenty-eight scholarships are offered each year. These cover the holder's incidental fees and the matriculation fee. For all the necessary expenses of the year, the

BOARD

The University does not furnish board. There are a large number of suitable places in Urbana and Champaign, within easy walking distance of the University, where students can obtain table board and rooms. There are several students' clubs at which the cost of meals is three and a half to four dollars a week. The Young Men's and Young Women's Christian Associations of the University will aid new students in procuring rooms and boarding places.

DESCRIPTION OF COURSES

ART AND DESIGN

The aim of the Department of Art and Design is to offer courses which will assist students in their University studies to cultivate esthetic taste, and to equip those who wish to study art professionally for advanced work in the professional art schools at home or abroad.

Attention is also called to courses in esthetics offered by the departments of philosophy and education, and to related courses in household science and architecture.

1. **FREE HAND DRAWING.**—An elementary course offering, first, lectures on the principles of perspective followed by practice in drawing; and, secondly, work arranged to be of direct assistance to the students in other departments of the University. For example, engineering students draw details of machinery; botanical students, plants and flowers; architectural students, casts of ornament. All students entering the department are required to enter this class or pass an examination in the subject. *I*; (2 or 3); *II*; (3). Assistant Professor E. J. LAKE, Mr. KELLEY.

2. **LIGHT AND SHADE.**—Study of values in charcoal, pencil, or monochrome wash as a preparation for advanced work. *I*, *II*; (3). Mr. KELLEY.

Prerequisite: Art and Design 1.

3. **DRAWING FROM THE ANTIQUE.**—Study of casts from the antique, including details of the face, masks, busts, and the figure. Study of artistic anatomy. This course aims to give students a sound knowledge of the principles of construction of the figure and prepare them for intelligent work from the life. The department owns a large collection of casts from Greek, Roman, and Renaissance sculpture. *I*, *II*; (3). Assistant Professor LAKE.

Prerequisite: Art and Design 1.

4. WATER COLOR PAINTING.—Still-life and flowers in water color. The department owns a large and varied collection of still-life, containing examples of the pottery of all countries, and flowers may be obtained from the University greenhouse at any season. *I, II; (3).* Miss JONES.

Prerequisite: Art and Design 1, 2.

5. OIL PAINTING.—Figure and portrait from life in costume. *I, II; (3).* Miss WETMORE.

Prerequisite: Art and Design 1, 2, and 3.

OIL PAINTING.—Still-life and flowers. *I, II; (3).*

Miss WETMORE.

Prerequisite: Art and Design 1, 2.

8. MODELING.—A course in clay modeling comprising work from the antique and from life in relief and the round. Instruction is given in casting. *I, II; (2).* Mr. KELLEY.

Prerequisite: Art and Design 1 and 3.

8a. MODELING.—A special section of course 8 for the study of ornament by architectural students. *I; (2).* Mr. KELLEY.

Prerequisite: Art and Design 1.

10. PEN AND PENCIL RENDERING.—In this course drawings are made with special reference to the requirements of the reproductive processes and commercial purposes. *I, II; (1).* Mr. KELLEY.

Prerequisite: Art and Design 1.

12. APPLIED DESIGN.—This course offers a review of the principles of design, followed by practical problems worked out in metal, leather, etc. *I, II; (3).* Miss JONES.

Prerequisite: Art and Design 1.

16. COLOR.—The use of color in design and in interior decoration. *I; (2).* Architecture 41 will be substituted for this course during the present year. Professor WELLS.

Prerequisite: Art and Design 1, 3.

19. HISTORY OF THE FINE ARTS.—A course of illustrated lectures on The History of the Fine Arts.—One period a week with required reading. *I, II; (1).* Assistant Professor LAKE.

20. TEACHERS' CLASS.—In this class the principles of art study are applied to the special problems of the public school. Published

courses in art for the public schools are compared; and the class prepares a model course of study. *I, II; (1).*

Assistant Professor LAKE.

Prerequisite: Art and Design 1, 2, 4.

LANGUAGE AND LITERATURE

THE CLASSICS

GREEK

COURSES FOR UNDERGRADUATES

Courses 1 to 4, inclusive, are designed to meet the needs of students who cannot present Greek for entrance, and yet wish to study the language. The announcement of authors is tentative, and may be changed as the progress of the class requires:

1. GRAMMAR AND READER.—*I; (4).* Mr. —.

2. GRAMMAR AND READER.—*II; (4).* Mr. —.

Prerequisite: Greek 1.

3. XENOPHON'S ANABASIS, with selections from the narrative parts of Thucydides. *I; (4).* Professor Moss.

Prerequisite: Greek 2.

4. HOMER.—ODYSSEY.—Selections. *II; (4).* Professor Moss.

Prerequisite: Greek 3.

5. HERODOTUS.—Greek prose composition. *I; (4).*

Professor Moss.

Prerequisite: Entrance credits.

6. ANDOCIDES AND LYSIAS.—Greek prose composition. *I; (4).*

Professor Moss.

Prerequisite: Greek 5.

*9. GREEK ORATORY.—*I; (3).*

Professor Moss.

Prerequisite: Greek 8.

*11. HOMER.—*The Iliad. II; (3).*

Professor Moss.

Prerequisite: Greek 8.

*13. NEW TESTAMENT GREEK.—*II; (2).*

Professor Moss.

Prerequisite: Greek 4.

*15. TEACHERS' COURSE.—Greek as a secondary school course.

The problems of the class-room. Texts, methods, etc. *II; (1).*

Professor Moss.

GREEK LIFE AND LITERATURE IN ENGLISH

(Courses 16-20 presuppose no knowledge of Greek and are open to all students above the freshman year.)

16. THE PRIVATE AND PUBLIC LIFE OF THE GREEK PEOPLE.—Lectures and prescribed readings. A large collection of photographs and lantern slides is used for illustrations. *I*; (1).

Professor Moss.

17. GREEK POETRY.—Lectures and prescribed readings from English translations. *I*; (2).

Professor Moss.

18. GREEK PROSE.—Lectures and prescribed readings from English translations. *II*; (2).

Professor Moss.

18. GREEK DRAMA.—Lectures and prescribed readings from English translations. *II*; (2).

Professor Moss.

20. HISTORY OF GREECE.—*I*; (3). Assistant Professor PEASE.
See courses in History.

Prerequisite: One course in history or in Greek.

FOR GRADUATES AND UNDERGRADUATES

*10. GREEK TRAGEDY.—*I*; (2).

Professor Moss.

Prerequisite: Greek 8.

*12. THUCYDIDES.—*II*; (2).

Professor Moss.

7 and 8. SOCRATES AS DEPICTED BY XENOPHON, ARISTOPHANES AND PLATO.—Xenophon's *Memorabilia*, Aristophanes' *Clouds*, Plato's *Protagoras*, *Gorgias*, *Euthyphro*, *Apology* and *Crito*. *I. II*; (3).

Associate Professor OLDFATHER.

Prerequisite: Greek 7 and 8.

*14. ADVANCED GREEK PROSE COMPOSITION.—*I*; (1).

Professor Moss.

Prerequisite: Greek 7 and 8.

COURSES FOR GRADUATES

101. GREEK ORATORY. Professor Moss.

102. INTRODUCTION TO THE SCIENCE OF LANGUAGE.—*I*; Same as Latin 101.

Mr. —

103. HOMER AND THE HOMERIC QUESTION.—The *Iliad* entire and parts of the *Odyssey*. Lectures and Readings. *I, II*; (2).

Associate Professor OLDFATHER.

*Courses 9 to 15 will not all be given in the same year. Students should confer with the instructor regarding the particular course desired.

LATIN.

FIRST YEAR COURSES

1. CICERO AND PLINY.—De Amicitia and selections from De Senectute; selections from Pliny's letters. Students offering three units in Latin will take this course. *I, II; (4).*

Assistant Professor PEASE

2. LIVY AND TERENCE.—Selections from Livy; the Phormio of Terence; Roman life in prose and verse. Students offering four units in Latin will take this course. *I, II; (4).* Professor BARTON.

SECOND YEAR COURSES

CATULLUS AND HORACE.—Selected Lyrics of Catullus and the first Book of the Odes of Horace with selections from books two to four.

Associate Professor OLDFATHER.

Prerequisite: One year of college Latin.

5. LATIN COMPOSITION.—This is an elementary course and will combine grammatical drill with practice in the simpler forms of expression. *I, II. (1).*

Mr. —.

Prerequisite: One year of college Latin.

6. PLAUTUS.—Four plays; one for careful study, the others for more rapid reading; scenic antiquities. *II; (4).*

Associate Professor OLDFATHER.

Prerequisite: One year of college Latin.

19. ROMAN HISTORY.—*II; (3).* Assistant Professor PEASE.

Prerequisite: One year of College History or Latin. See courses in History.

COURSES OPEN TO ALL STUDENTS EXCEPT FRESHMEN

(Knowledge of Latin is not required.)

12. HORACE AND VERGIL IN ENGLISH TRANSLATIONS. *II; (1).*

Mr. —.

13. ROMAN LIFE.—Both the public and private life of the Romans will be considered but more particularly the latter. Politics business, home life, amusements, education, morals, religion, the city of Rome and its monuments will be considered. The lantern will be used to supplement the lectures. *I, II; (1).*

(1).

Professor BARTON.

COURSES FOR ADVANCED UNDERGRADUATES

7. PETRONIUS AND APULEIUS.—Selections. The Roman Novel. *II*; (2). Mr. —.

(Not given in 1909-10.)

9. TEACHERS' COURSE.—The purpose and methods of preparatory Latin instruction; the teacher's preparation; the apparatus of most value in preparatory work. *II*; (1). Professor BARTON.

10. LATIN COMPOSITION.—A study of the leading principles with imitation of assigned models. *I*; (2). Professor BARTON.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

14. SENECA.—Selections from the Letters; two tragedies. *I*; (3). Professor BARTON.

16. VERGIL.—Selections from the Aeneid, books 7-12, the Eclogues, and portions of the Georgics. *II*; (3). Mr. —.

COURSES FOR GRADUATES

101. INTRODUCTION TO THE SCIENCE OF LANGUAGE. *I*. Mr. —.

102. HISTORICAL LATIN GRAMMAR. *II*. Mr. —.

103. CICERO.—De Natura Deorum and De Divinatione. *..I*. Assistant Professor PEASE.

105. SURVEY OF LATIN POETRY. *II*. Assistant Professor PEASE.

106. LATIN COMEDY AND TERENCE.—Introduction to the methods of critical research. *II*; (2). Associate Professor OLDFATHER.

108. TACITUS.—The Histories. *II*. Professor BARTON.

GERMANIC LANGUAGES

GERMAN

FIRST-YEAR COURSES

Assistant Professor MEYER is in general charge of these courses.

1. ELEMENTARY COURSE.—Grammar and easy reading. *I*; (4). Assistant Professor MEYER, Assistant Professor BROOKS, Miss BLAISDELL, Dr. CHILES, Dr. WIEHR, Dr. POOR, Dr. ECKELMANN.

3. NARRATIVE AND DESCRIPTIVE PROSE.—Grammar and syntax,

reading of easy texts, exercises in prose composition. *II*; (4). Assistant Professor MEYER, Assistant Professor BROOKS, Miss BLAISDELL, Dr. CHILES, Dr. WIEHR, Dr. POOR, Dr. ECKELMANN.

Note—Two sections of German 3 will be offered in the first semester.

Prerequisite: German 1, or one year of high school German.

SECOND-YEAR COURSES

Assistant Professor BROOKS is in general charge of these courses.

4. DESCRIPTIVE AND HISTORICAL PROSE.—Selections from standard prose writers. Sight reading. Prose composition. *I*; (4). Assistant Professor MEYER, Assistant Professor BROOKS, Miss BLAISDELL, Dr. CHILES, Dr. WIEHR, Dr. POOR, Dr. ECKELMANN

Prerequisite: German 1 and 3, or two years of high school German.

Note.—Two sections of German 4 will be offered in the second semester.

5. INTRODUCTION TO CLASSICS.—Two or three of the classics, such as Schiller's *Jungfrau von Orleans*, or Goethe's *Hermann und Dorothea*. Prose composition. *II*; (4). Assistant Professor BROOKS, Miss BLAISDELL, Dr. CHILES, Dr. WIEHR, Dr. POOR, Dr. ECKELMANN.

Prerequisite: German 4.

6. SCIENTIFIC PROSE.—Practice in the rapid reading of works of a general scientific character. *II*; (4). Dr. CHILES, Dr. POOR.

Prerequisite: German 4.

THIRD-YEAR COURSES

Not more than ten hours of these courses may be counted towards a major without the approval of the head of the department.

13. MODERN FICTION.—Rapid reading of works by modern writers such as Hauff, Freytag, Keller, Storm, and others. Open only to freshmen. *I*; (3). Assistant Professor MEYER.

Prerequisite: Three (or four) years of high school German.

14. INTRODUCTORY SCHILLER COURSE.—Reading of works illustrating different periods in Schiller's development such as *Kabale und Liebe*, *Don Carlos*, *Braut von Messina*, and others. Not open to freshmen. *I*; (3). Assistant Professor BROOKS.

Prerequisite: German 5 or 13 or 16 or 24.

15. CRITICAL AND HISTORICAL PROSE.—Reading of selections from standard writers dealing with important phases of German history, literature, and culture. Not open to freshmen. *I*; (3).

Dr. WIEHR.

Prerequisites German 5 or 13 or 16 or 24.

16. INTERMEDIATE PROSE COMPOSITION.—Translation of ordinary prose into German, study of idiomatic construction and practice in rendering at sight. The work is conducted, as far as possible in German. *I, II*; (3).

Miss BLAISDELL, Dr. CHILES.

Prerequisite: German 5 or equivalent.

10. INTRODUCTORY GOETHE COURSE.—Reading of works illustrating different periods in Goethe's development such as *Götz von Berlichingen*, *Egmont*, *Iphigenie auf Tauris*, and selections from *Dichtung und Wahrheit*. Not open to freshmen. *II*; (3).

Assistant Professor MEYER and Assistant Professor BROOKS.

Prerequisite: German 14 or 15 or 24 or first semester of 16.

24. MODERN DRAMA.—Rapid reading of dramas by Grillparzer, Hebbel, Hauptmann and others. *II*; (3).

Dr. WIEHR.

Prerequisite: German 13 or 14 or 15 or first semester of 16 or four years of high school German.

28. GERMAN LYRICS.—Study of the chief lyric poets with some attention to the historical development of the lyric. Not open to freshmen. *II*; (2).

Assistant Professor MEYER.

Prerequisite: German 13 or 14 or 15, or first semester of 16.

PRIMARILY FOURTH-YEAR COURSES

8. SCHILLER.—The life of Schiller and study of *Wallenstein* and other selections. *I*; (3).

Associate Professor LESSING.

Prerequisite: German 10 or 24 or 28 or 29.

9a. GOETHE'S FAUST.—The Faust legend and early Faust books and plays, the genesis of Goethe's Faust, reading of both parts. *I, II*; (2).

Professor GOEBEL.

(Omitted in 1909-10.)

9b. GOETHE-SCHILLER.—Interpretation of Goethe's poems, Goethe's Tasso and Schiller's *Ueber naive und sentimentalische Dichtung*. *I, II*; (2).

Professor GOEBEL.

26. GERMAN LITERATURE BEFORE THE REFORMATION.—Lectures, recitations, and reports on assigned reading. This course is intended to cover the period not included in course 11. *I*; (3).

Associate Professor LESSING.

Prerequisite: German 10 or 24 or 28.

II. GERMAN LITERATURE AFTER THE REFORMATION.—Lectures, recitations, and reports on assigned collateral reading. *II*; (3). Associate Professor LESSING.

Prerequisite: German 26.

25. TEACHERS' COURSE.—Discussion of methods, examination of text-books. Open to seniors and special students who have not less than 20 hours' credit in German. It should be accompanied or preceded by Education 1 or its equivalent. *II*; (2).

Professor GOEBEL.

Prerequisite: First semester of German 29 or equivalent.

27. LESSING.—The life of Lessing and study of *Nathan der Weise*, *Emilia Galotti*, and other selections. *II*; (3).

Associate Professor LESSING.

Prerequisite: German 8 or 10 or first semester of 9 or 29.

29. ADVANCED PROSE COMPOSITION.—An advanced teachers' course aiming to give some facility in idiomatic expression in speaking and writing German. Themes on Germany and German life, based on suitable reading, discussed in German. *I, II*; (2). Dr. WIEHR.

Prerequisite: German 16.

COURSES FOR GRADUATES

101. THE SEMINARY IN GERMANIC PHILOLOGY is conducted by Professor Goebel. The work is adapted to the abilities and tendencies of the students. The primary object is to give training in original research. The results of the work, when of value, may be published in the *Journal of English and Germanic Philology*. The subject for 1909-10 will be Uhland's *Alte hoch-und niederdeutsche Volkslieder*. *I, II*.

103. INTRODUCTION TO THE HISTORICAL STUDY OF THE GERMANIC LANGUAGES.—Lectures; discussions of special topics. History of German Philology. Comparative Grammar of the Old Germanic dialects. *II*.

Professor GOEBEL.

104. GOTHIC.—An introductory study of its grammar and literature. *I*.

Professor GOEBEL.

Note.—Courses 9, 26 and 29 are especially recommended to all candidates for teachers' certificates and to all candidates for graduate scholarships in German.

105. OLD HIGH GERMAN.—Grammar and interpretation of the oldest literary documents. *II.* Dr. WIEHR.

106. MIDDLE HIGH GERMAN.—Grammar and interpretation of selected texts. Open to seniors; especially recommended to candidates for teachers' certificates. *I.* Professor GOEBEL.

109. GERMAN LITERATURE FROM 1786 TO 1805.—The course will include Goethe's Italian journey, the period of Goethe's and Schiller's friendship, the birth of the Romantic movement. Especial attention will be given to the influence of Goethe and Schiller upon each other as shown by their correspondence and by their works during this period. *II.* Assistant Professor MEYER.

110. EARLY GERMAN DRAMA.—The development of the German drama up to the Reformation, including the medieval religious drama, the Shrovetide plays and the beginning of the Humanistic drama. *I.* Assistant Professor BROOKS.

113. GERMAN LITERATURE OF THE FIFTEENTH AND SIXTEENTH CENTURIES.—Survey of the literature on the background of the general history of the time. Luther and the Reformation, Mastersingers and Folksong, the Reformation drama, Hans Sachs, Brant, Fischart, the chap books, the English comedians. *II.*

Assistant Professor BROOKS.

115. HISTORY OF GERMAN LITERATURE FROM GOETHE'S DEATH TO THE PRESENT TIME.—*I, II.* Associate Professor LESSING.

116. HISTORY OF LITERARY CRITICISM IN GERMANY.—*II.*

Associate Professor LESSING.

117. HISTORY OF GERMAN LITERATURE DURING THE EIGHTEENTH CENTURY. *I.* Professor GOEBEL.

118. STUDIES IN THE HISTORY OF THE GERMAN DRAMA WITH SPECIAL REFERENCE TO KLEIST AND GRILLPARZER. *I, II.*

Associate Professor LESSING.

119. HISTORY OF THE GERMAN NOVEL.—*I, II.* Dr. ECKELMANN.

121. —NIBELUNGENLIED.—Lectures and interpretations.—*II.*

Professor GOEBEL.

123. THE ROMANTIC SCHOOL.—The course deals with the literary side of early Romanticism in Germany. Lectures and reports on assigned topics. *I.* Dr. WIEHR.

SCANDINAVIAN LANGUAGES

UNDERGRADUATE COURSES, NOT OPEN TO FRESHMEN

1. ELEMENTARY NORWEGIAN.—Principles of the grammar, pronunciation; and the reading of easy prose, followed by Björnson's *Synnöve Solbakken*, Lie's *Fortaellinger og Skildringer fra Norge* and Ibsen's *Samfundets Stötter*, I, II; (3 or 4.)

Assistant Professor FLOM.

This course alternates with course 2 and will be given in 1909-10.

2. ELEMENTARY SWEDISH.—Principles of the grammar, pronunciation, and the reading of easy prose, followed by a study of the poetry of the Gothic school of Runeberg's *Fänrik Staals Sägner* and Selma Lagerlöf's *I Dalarne*, I, II; (2).

Assistant Professor FLOM.

This course alternates with course 1 and will be given in 1910-11.

3. IBSEN'S *Brand* AND *Peer Gynt*.—Class reading and interpretation. Lectures on the years, 1852-1867 in Ibsen's life. I, (2). Assistant Professor FLOM.

This course forms a sequence with course 4, but will not be given in 1909-10.

Prerequisite: A reading knowledge of Norwegian.

4. TEGNER'S *Frithjofs Saga*.—Reading in class and study of Tegnér's masterpiece with reference to genesis, development, and influence. II; (2).

Assistant Professor FLOM.

This course forms a sequence with course 3 and will be given in 1909-10.

Prerequisite: A reading knowledge of Swedish.

5. HENRIK IBSEN.—Lectures and interpretation of selected works. Early influences in Ibsen's life, the development of his art and his view of life, his dramatic technique as illustrated in his later dramas. The works studied in 1909-10 will be *Ghosts* and *John Gabriel Borkman*. Archer's translation will be used; the course does not presuppose a knowledge of Norwegian. II; (2).

Assistant Professor FLOM.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

II. SURVEY OF THE HISTORY OF THE SWEDISH LANGUAGE AND LITERATURE.—A course of lectures which will aim to present in out-

line the development, especially of the literature, from the time of the runic inscriptions down to Tegnér's death. *I; (2).*

Assistant Professor FLOM.

Prerequisite: A reading knowledge of one of the Scandinavian languages.

12. NORSE MYTHOLOGY.—An outline of the religious beliefs of the Norsemen in the pre-Christian times, and interpretation of the principal myths with reference to origin and meaning. *I; (2).*

Assistant Professor FLOM.

Knowledge of a Scandinavian language not required.

COURSES FOR GRADUATES

101. OLD NORSE.—Introduction to the language as a member of the Germanic group. Reading of the *Volsungasaga* with selections from the heroic lays. *Twice a week. I, II.*

Assistant Professor FLOM.

103. ADVANCED OLD NORSE.—A critical study of all the lays of the Elder Edda. First semester, mythological lays; second semester, heroic lays. *Twice a week. I, II.*

Assistant Professor FLOM.

Prerequisite: Course 101.

This course is offered for 1910-11, and will thereafter alternate with a course in Old Danish and Old Swedish of one semester each.

ROMANCE LANGUAGES

FRENCH

FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Study of grammar. Drill in pronunciation. Reading of simpler modern authors, with exercise in composition and conversation. *I, II; (4).*

Professor OLIVER, Associate Professor CARNAHAN, Dr. JONES, Mr. FORTIER, Mr. OWEN, Mr. HARVEY, Mr. ———.

Associate Professor Carnahan is in general charge of this course.

2. MODERN PROSE; POETRY AND DRAMA.—Rapid reading of

representative modern authors. Advanced syntax and composition. *I, II; (4).*

Professor OLIVER, Mr. FORTIER, Mr. ———

Prerequisite: French 1.

3. INTERMEDIATE PROSE COMPOSITION AND CONVERSATION.—

This course is conducted entirely in French, giving facility in idiomatic expression, both in writing and in speaking. Readings, themes, dictations and talks upon France and French life. It is especially designed for students in the courses in business training and for those intending to teach French. It is advisable to take the course in connection with higher courses in French literature. *I, II; (3).*

Mr. FORTIER.

Prerequisite: French 2.

4. ADVANCED COMPOSITION.—A continuation of French 3 with special emphasis upon advanced syntax. The work will be done largely by means of individual consultations. *I, II; (2).*

Mr. FORTIER.

Prerequisite: French 3.

(Not given in 1909-1910).

8. MODERN FRENCH DRAMA.—A study of the drama in France from the beginning of the nineteenth century to the present time. Rapid translations and sight reading. Lectures. Reports on collateral reading. *I, II; (2).*

Mr. FORTIER.

Prerequisite: French 2.

Note: This course is required of those who expect the recommendation of the department to teach French.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

10. GENERAL SURVEY OF FRENCH LITERATURE.—An introduction to more extended study of special periods and authors. The student becomes acquainted with some of the literary masterpieces of France and with the main currents of French literature from the beginning to the present time. *I, II; (2).*

Dr. JONES.

Prerequisite: French 2.

Note: This course is strongly recommended to those who desire the endorsement of the department to teach French.

11. VICTOR HUGO AND THE LYRIC POETS OF FRANCE.—Rise and growth of lyric poetry in France. The chief emphasis falls upon Victor Hugo, although the poets previous to Hugo and also his con-

temporaries receive attention. The principles of French versification are studied and illustrated particularly in examples of Victor Hugo's poems. *I, II; (2).* Dr. JONES.

Prerequisite: French 2.

21. MODERN FRENCH NOVELISTS.—A study of the novel in France from the beginning of the nineteenth century to the present time. Rapid translation and sight reading. Hugo, de Vigny, Dumas, Balzac, Flaubert, Daudet, Zola and living writers. Lectures. Reports on collateral reading. *I, II; (2).*

Associate Professor CARNAHAN.

Prerequisite: French 8, 10, or 11.

24. THE SEVENTEENTH CENTURY.—A study of the great masterpieces of the seventeenth century in France with especial emphasis upon the drama. *I, II; (2).* Professor OLIVER.

Prerequisites French 8, 10, or 11.

25. COURSE FOR TEACHERS.—Discussion of the various methods of teaching French in this country and abroad. Actual contact with class-room problems. *I; (1).*

Professor OLIVER, with the cooperation of Assistant Professor CARNAHAN, and other members of the department.

Prerequisite: Twenty-four hours' credit in French.

COURSES FOR GRADUATES

101. THE XVTH AND XVITH CENTURIES IN FRANCE.—*I, II.*

Associate Professor CARNAHAN.

102. OLD FRENCH READINGS.—First Semester: Chrétien de Troyes and the court epic. Second Semester: Readings from Marie de France, the prose chroniclers and the dramatists of the middle ages. *I, II.* Professor OLIVER.

103. OLD FRENCH PHONOLOGY AND MORPHOLOGY.—Development of Old French from Vulgar Latin. *I, II.*

Associate Professor CARNAHAN.

125. SEMINARY.—An opportunity is given here for research in special fields of French and other Romance literatures.

ITALIAN

FOR UNDERGRADUATES

I. ELEMENTARY COURSE.—Italian grammar with composition. First semester; selections from Manzoni's *I Promessi Sposi*. Sec-

ond semester: selections from Dante's *Vita Nuova* and from the *Inferno*. The English translation of Gaspary's *Italian Literature* will be used as a reference book. *I, II; (3.)* Dr. JONES.

FOR GRADUATES

115. OLD ITALIAN READINGS AND ITALIAN HISTORICAL GRAMMAR.—*I, II.* Dr. JONES.

SPANISH

FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Grammar and easy reading. Special emphasis is laid upon the acquisition of the ability to understand spoken Spanish. *I, II; (4.)*

Assistant Professor FITZ-GERALD, Dr. SEYMOUR, Mr. OWEN, Mr. —

2. CONVERSATION AND COMPOSITION.—Reading of modern prose, conversation and composition. The vocabulary of everyday life is emphasized. Commercial correspondence. *I, II; (2)* Dr. SEYMOUR.

Prerequisite: Spanish I.

3. LITERARY COURSE.—Advanced reading and composition. The modern novel, drama and poetry will be studied. Readings from Cervantes's *Don Quijote*. Outline of Spanish literature. *I, II; (3.)*

Assistant Professor FITZ-GERALD.

Prerequisite: Spanish I.

4. ADVANCED CONVERSATION AND COMPOSITION.—Commercial correspondence. Reading of commercial Spanish. *I, II; (2.)*

Dr. SEYMOUR.

Prerequisite: Spanish 2.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

10. THE SPANISH NOVEL OF THE SIXTEENTH AND SEVENTEENTH CENTURIES.—Influence on the English novel. Lazarillo de Tormes and other picaresque novels. Cervantes. *I; (2.)* Dr. SEYMOUR.

Prerequisite: Spanish 3.

11. CLASSIC SPANISH DRAMA.—Lope de Vega, Tirso de Molina, Calderón and Ruiz de Alarcón. *Schack's Spanish Dramatic Literature. II; (2.)*

Dr. SEYMOUR.

Prerequisite: Spanish 3.

12. *DON QUIJOTE*.—A critical study of the work, using facsimile editions of original texts. *I, II; (2)*. Dr. SEYMOUR.
Prerequisite: Spanish 10.

COURSES FOR GRADUATES

118. *THE EARLY SPANISH SATIRISTS*.—Juan Ruiz, Archpriest of Hita, and Martinez de Toledo, Archpriest of Talavera. *I*.

Dr. SEYMOUR.

119. *EARLY RELIGIOUS POETRY*.—Berceo's works will be the basis of this course. *II*.

Dr. SEYMOUR.

Assistant Professor FITZ-GERALD.

120. *OLD SPANISH*.—Reading of the older monuments of Spanish literature. Phonetics and syntax of the language. *I, II*.

Dr. SEYMOUR.

PROVENÇAL

COURSE FOR GRADUATES

112. *OLD PROVENÇAL*.—A study of the transformation of Vulgar Latin into Provençal, and of the poetry of the troubadours. *II*.
I, II.

Assistant Professor FITZ-GERALD.

ENGLISH

ENGLISH LANGUAGE AND LITERATURE

(Unless otherwise specified, the second semester of courses running throughout the year may not be taken without the first.)

ELEMENTARY COURSES

English 1 and 2 may not be counted toward a major, and of the other courses in this group, only twelve hours may be so counted.

- I. *INTRODUCTORY COURSE: ENGLISH LITERATURE BEFORE THE NINETEENTH CENTURY*.—*I; (4)*.

Assistant Professor BALDWIN, Assistant Professor PAUL,
 Dr. JONES, Mr. SEARS, Mr. PHILLIPS, Dr. ZEITLIN, Mr.
 BRADSHER, Mr. WARNOCK, Mr. TIETJE, Mrs. FAWCETT,
 Mr. JACKSON and others.

Assistant Professor Baldwin will have the general direction of this course. At least one section of the course will be repeated

in the second semester. Juniors and seniors in the College of Literature and Arts, taking the course, will not receive full credit for it unless additional work is done outside the course.

2. INTRODUCTORY COURSE: ENGLISH LITERATURE OF THE NINETEENTH CENTURY.—II; (4)

Assistant Professor BALDWIN, Assistant Professor PAUL, Dr. JONES, Mr. SEARS, Mr. PHILLIPS, Dr. ZEITLIN, Mr. BRADSHAW, Mrs. FAWCETT, and others.

Prerequisite: English I.

Assistant Professor Baldwin will have the general direction of this course. Juniors and seniors in the College of Literature and Arts taking this course will not receive full credit for it unless additional work is done outside the course.

16. AMERICAN LITERATURE.—I, II; (3).

Assistant Professor PAUL, Mr. SEARS.

Prerequisite: English I and 2.

33. ENGLISH LITERATURE FROM 1798 TO 1837.—I, II; (3).

Dr. ZEITLIN.

Prerequisite: English I and 2. The first semester will be devoted to the poetry of the period; the second, to the prose. Either semester may be taken without the other.

23. ELEMENTARY COURSE IN SHAKSPERE.—Introductory to English 5. II; (3).

Associate Professor SHERMAN, Assistant Professor PAUL.

Prerequisite: English I and 2.

19. LITERARY STUDY OF THE BIBLE.—In the first semester the Psalms and the Prophets (lyric poetry and oratory) are studied; in the second semester, Proverbs, Ecclesiastes, and Job (literature of wisdom). I, II; (3).

Assistant Professor BALDWIN.

Prerequisite: Eight hours of English literature. Only seniors or juniors will ordinarily be admitted to English 19.

INTERMEDIATE COURSES

29. ENGLISH LITERATURE 1557-1688.—Exclusive of the drama. I; (3).

Assistant Professor BALDWIN.

Prerequisite: Eleven hours of English literature.

31. ENGLISH LITERATURE 1688-1798.—II; (3).

Assistant Professor PAUL.

Prerequisite: Eleven hours of English literature.

24. ENGLISH LITERATURE OF THE VICTORIAN PERIOD.—The first semester will be devoted to the poetry of the period; the second to the prose. Either semester may be taken without the other. *I, II; (3).*

Prerequisite: Fourteen hours of English literature.

(Not to be given in 1909-10; to be given in 1910-11.)

36. CONTEMPORARY WRITERS.—A study of prose fiction and the essay in England and the United States during the present generation. Special attention will be paid to periodicals. *I; (3).*

Professor DODGE.

Prerequisite: Fourteen hours of English literature.

35. THE DRAMA 1600-1900.—*I, II; (3).*

Associate Professor SHERMAN.

Prerequisite: Fourteen hours of English literature, which must include English 23.

17. HISTORY OF THE ENGLISH LANGUAGE.—*I, II; (3).*

Associate Professor FULTON.

Prerequisite: Fourteen hours of English, or eight hours of

ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

5. SHAKSPERE AND HIS PREDECESSORS.—*I, II; (3).*

Professor DODGE.

Prerequisite: Seventeen hours of English literature, which must include English 23. The second semester, which will be devoted to Shakspeare, may be taken without the first.

7. CHAUCER.—*I, II; (3).*

Dr. JONES.

Prerequisite: Seventeen hours of English literature.

4. THE HISTORY AND PRINCIPLES OF ENGLISH VERSIFICATION.—Theory of English metre and rhythm; history of the development of the forms of English verse. *II; (2).*

Prerequisite: Seventeen hours of English literature.

(Not to be given in 1909-10; to be given in 1910-11.)

6. HISTORY OF CRITICISM.—A study of the main lines of development in the history of criticism. *II; (3).*

Associate Professor FULTON.

Prerequisite: Seventeen hours of English literature.

11. THE PRINCIPLES OF CRITICISM.—A study of the principles underlying the art of criticism. *I; (3).*

Associate Professor FULTON.

Prerequisite: Seventeen hours of English literature. Students who take English 11 are advised to take either before or with it Philosophy 8 (Esthetics).

8. OLD ENGLISH.—(Anglo-Saxon).—Grammar, prose, short poems, the first half of *Beowulf*. I, II; (3). Professor DODGE.

Prerequisite: Seventeen hours of English literature, or eleven hours of English and eight of German.

15. TEACHER'S COURSE.—Methods of teaching English literature and composition in the high school. I, II; (2).

Assistant Professor PAUL and others.

Prerequisite: Seventeen hours of English literature and nine hours of rhetoric.

COURSES FOR GRADUATES

101. RESEARCH IN SPECIAL PERIODS.—Competent graduate students are encouraged to seek the advice and assistance of the Department of English and to submit to the Department plans for study in the language or literature of the periods mentioned below.

A. Anglo-Saxon Language and Literature. Professor DODGE.

B. Thirteenth and Fourteenth Centuries. Dr. JONES.

C. Sixteenth Century.

Professor DODGE, Associate Professor SHERMAN.

D. Seventeenth Century.

Professor GREENOUGH, Assistant Professor BALDWIN.

E. Eighteenth Century. Professor GREENOUGH.

F. Nineteenth Century.

Associate Professor FULTON, Associate Professor SHERMAN.

Prerequisite: The consent of the Department of English.

103. THE POETRY OF MILTON.—II; (3).

Assistant Professor BALDWIN.

Prerequisite: Twenty hours of English literature. Students are advised to take English 29 before taking English 3.

107. THE HISTORY OF ENGLISH PROSE FICTION.—I, II; (3).

Professor GREENOUGH.

Prerequisite: Twenty hours of English literature and a reading knowledge of French.

(Not given in 1909-10; probably to be given in 1910-11.)

108. AMERICAN LITERATURE.—II; (3). Professor GREENOUGH.

Prerequisite: Twenty hours of English Literature, which should include English 16.

110. ANGLO-SAXON POETRY.—*I, II; (3).* Professor DODGE.
Prerequisite: English 8.

112. THE HISTORY AND PRINCIPLES OF ENGLISH GRAMMAR.—*I, II; (3).* Dr. ZEITLIN.

Prerequisite: English 8.

126. ENGLISH BALLADS AND METRICAL ROMANCES.—*I, II; (3).*
 Dr. JONES.

Prerequisite: Twenty hours of English literature. Students who elect English 126 are advised to take either with or before it English 7 (Chaucer) and Romance Languages 102 (Old French).

127. MIDDLE ENGLISH.—Critical reading of Middle English texts. *I, II; (3).* Dr. JONES.

Prerequisite: English 8.

136. THE TRANSITION FROM THE SEVENTEENTH TO THE EIGHTEENTH CENTURY IN ENGLISH LITERATURE.—*I, II; (3)*

Professor GREENOUGH.

Prerequisite: Twenty hours of English literature. The attention of students who intend to take English 136 is called to History 4 (English Constitutional History), French 114 (Classic French Drama), Philosophy 4 (Modern Philosophy), Philosophy 15 (the Philosophic Thought of England in the Eighteenth Century). With the consent of the instructor these courses may be counted toward the fulfillment of the prerequisite.

137. NINETEENTH CENTURY PROSE WRITERS.—(Advanced Course) *I, II; (3).* Associate Professor SHERMAN.

Prerequisite: Twenty hours of English literature. The attention of students who intend to take English 137 is called to Philosophy 4 (Modern Philosophy), Philosophy 10 (Thought Movements of the Nineteenth Century), and History 20 (Europe in the Nineteenth Century). With the consent of the instructor these courses may be counted toward the fulfillment of the prerequisite. (Not to be given in 1909-10; to be given in 1910-11).

139. THE ROMANTIC MOVEMENT IN ENGLAND.—*I, II; (3).*

Associate Professor SHERMAN.

Prerequisite: Twenty hours of English literature and a reading knowledge of either French or German. The attention of students who intend to take English 138 is called to History 7 (The Revolutionary and Napoleonic Era). With the consent of the instructor this course may be counted toward the fulfillment of the prerequisite.

RHETORIC

ELEMENTARY COURSES

I. RHETORIC AND THEMES.—Required for students in the Colleges of Literature and Arts, Agriculture, Science and Engineering. *I, II; (3.)*

Professor GREENOUGH, Associate Professor FULTON, Assistant Professor BALDWIN, Dr. JONES, Dr. ZEITLIN, Mr. SEARS, Mr. PHILLIPS, Mr. BRADSHAW, Mr. WARNOCK, Mr. TIETJE, Mrs. FAWCETT, Miss HARBARGER, Mr. JACKSON, Miss COLLINS and others.

Students who enter Rhetoric I at the beginning of the second semester must join a section in which the work of the first semester is repeated. Of these sections there will be at least two.

Professor Greenough will have the general direction of this course.

3. DAILY THEMES.—Five short themes a week with a page theme every fortnight. Only one semester of this work may be taken. *I or II; (4).*

Mr. TIETJE and Mr. —

Prerequisite: Rhetoric I.

10. BUSINESS WRITING.—Business correspondence with practice in incidental writing, summaries, etc. Open only to those taking a business course, unless with the consent of the instructor. *II; (2).*

Professor CLARK.

Prerequisite: Rhetoric I.

11. COMPOSITION AND LITERATURE.—For students in the College of Engineering who elect English as their language. The course will be about equally divided between composition and English prose literature. *II; (4).*

Mr. WARNOCK.

INTERMEDIATE COURSES

20. ENGLISH COMPOSITION.—The purpose of this course is to give students the opportunity to organize and write long themes. It may not be taken at the same time with Rhetoric 3. The second semester may be taken without the first. *I, II; (3).*

Professor CLARK.

Prerequisite: Rhetoric I and eleven hours of English literature.

16. EXPOSITION.—Study of the principles underlying the exposi-

tory method; analysis of masterpieces of exposition, both literary and scientific; themes. *I*; (3). Associate Professor FULTON.

Prerequisite: Two years of college work, which must include Rhetoric I.

2. ARGUMENTATION.—Text book and assigned work; Baker and Huntington's *Principles of Argumentation II*; (3). Mr. HALLIDAY.

Prerequisite: Rhetoric I and Philosophy I.

12. NEWSPAPER WRITING.—Lectures, discussions, assignments, in news writing, interviewing and reporting, study of news form, news value; typography, proof-reading, etc. The work is made as practical as possible. In the second semester one section is organized to study the management of agricultural papers and to give practice in preparing material for the agricultural press. *I, II*; (2).

Professor CLARK and lecturers.

Prerequisite: Rhetoric I and either Rhetoric 3 or one semester of Rhetoric 20.

15. ADVANCED NEWSPAPER WRITING.—In the first semester this course presents larger problems in reporting than those in Course 12, including the collecting and arranging of scattered news facts for purposes of generalization. In the second semester an effort is made to cultivate the student's ability to apply the principles of history, economics, political science, etc., to public events. Copy reading, head writing, editing, and editorial writing are studied and practiced. Special effort is made to cultivate a good sound English style. *I, II*; (3).

Associate Professor SHERMAN.

Prerequisite: Rhetoric 12, or some practical experience in reporting.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

6. ENGLISH COMPOSITION.—*I*. (3).

Mr. TIETJE.

Prerequisite: Nine hours of rhetoric, which must include Rhetoric 3 or one semester of Rhetoric 20, and fourteen hours of English Literature.

17. ENGLISH COMPOSITION.—*II*; (3).

Associate Professor SHERMAN.

Prerequisite: Nine hours of rhetoric, which must include Rhetoric 3 or one semester of Rhetoric 20, and seventeen hours of English Literature.

COURSES IN PUBLIC SPEAKING

4. THE ART OF DEBATE.—Brief writing and extemporaneous presentation of arguments in formal debate. *I, II; (2).*

Mr. HALLIDAY.

Prerequisite: Rhetoric 1 and 7. It is desirable that Rhetoric 2 should also precede this course.

5. EXTEMPORE SPEAKING.—Platform discussion of current events; practice in after-dinner speaking, impromptu debate, etc. *I, II; (1).*

Mr. HALLIDAY.

Prerequisites Rhetoric 1 and 7.

5a. EXTEMPORE SPEAKING.—For law students only. This course follows the general lines of Rhetoric 5, but has special reference to the sort of public speaking for which lawyers are called upon. *I; (2).*

Mr. HALLIDAY.

(Not given in 1909-10).

7. PUBLIC SPEAKING.—An introductory course in public speaking—vocal, breathing, action, and declamation exercises supplemented by text-book. Sections will be so limited as to allow much individual instruction. Work may not be begun in the second semester. *I, II; (2).*

Mr. HALLIDAY, Mr. PEARCE, Miss LANDEE

8. INTERPRETATIVE READING.—The vocal interpretation of literature. *I; (3).*

Mr. GUILD

Prerequisite: Rhetoric 7.

9. DRAMATIC READING.—The study and presentation of a classic play or of special scenes. Open only to those who are approved by the instructor. *II; (1-4).*

Mr. GUILD.

13. INTER-COLLEGIATE DEBATING.—Students who wish to take part in any of the inter-collegiate debates should register in this course if they wish credit for their work. *I; II; (2).*

Mr. PEARCE.

14. ORATORICAL COMPOSITION AND DELIVERY.—The leading English and American orations are read and criticized. Students write and deliver two orations. Lectures and supplementary reading. *I; (3).*

Mr. PEARCE.

Prerequisite: Rhetoric 1 and 7.

THE SOCIAL SCIENCES

HISTORY

Students who expect to teach history or to make that subject a major are advised to take during their freshman year History 1 and 11. For the sophomore year History 3 and 23 are recommended. During the junior and senior years students may select courses from groups B and C, in accordance with their individual tastes and interests, including some work in group C. For students who expect to teach in secondary schools some work in ancient history is also important.

A. COURSES OPEN TO FRESHMEN

(Seniors taking these courses may receive half credit only unless they have taken a sufficient amount of additional work to entitle them to full credit.)

I. CONTINENTAL EUROPEAN HISTORY.—This course serves as an introduction to the general history of Europe from the fourth century to the present time. It is a prerequisite for all advanced work in European history, and is arranged with special reference to the needs of those desiring a historical background for the study of literature, politics, and economic development. The course is conducted by means of recitations, informal lectures, and collateral readings. The work of the two semesters taken together constitutes a single course. The work of neither semester may be taken separately without special permission. *I. II; (3).*

Professor FORD, Assistant Professor LARSON, Dr. PAETOW.

II. HISTORY OF ENGLAND TO 1859.—In this course the emphasis is placed on political events, but some attention is also given to social and institutional history. Gardiner's *Student's History of England* is used as a guide; the text-book is supplemented by lectures and collateral reading. The course may advantageously be combined with English economic history (*Economics 7*), or Continental European history (*History 1*). *II; (3).*

Assistant Professor LARSON.

B. UNDERGRADUATE COURSES NOT OPEN TO FRESHMEN

3. HISTORY OF THE UNITED STATES.—The first semester will

cover the colonial era, the Revolution, and the genesis of the federal constitution. The second semester will cover the history of the United States under the Constitution. Emphasis is laid upon political and constitutional history, but considerable attention is also given to economic, social, and religious development. This course may with advantage be combined with Political Science 1 and 3, and Economics 22. The work of either semester may be taken separately. *I, II; (3).*

Professor GREENE and Assistant Professor ROBERTSON.

Prerequisite: One year of college work, including one course in history, economics, or political science.

5. HISTORY OF GREECE.—*I; (3).* This course is described under the Department of Classics as Greek 20.

6. HISTORY OF ROME.—*II; (3).* This course is described under the Department of Classics as Latin 19.

7. THE REVOLUTIONARY AND NAPOLEONIC ERA.—This course includes a survey of French conditions in the eighteenth century before 1774, an account of the events between 1774 and 1789 which precipitated the revolution in France, the reform work of the early years of the Revolution, and the rise and dominance of Napoleon in France and Europe. Text-books, readings, and lectures. *I; (3).*

Professor FORD.

Prerequisite: History 1.

17. THE HISTORY OF ILLINOIS.—The subject is treated not from a purely local point of view, but as illustrating the development of a typical commonwealth in the Middle West. This course may properly be combined with Political Science 3. *I; (2).*

Associate Professor ALVORD.

Prerequisite: History 3.

20. EUROPE IN THE NINETEENTH CENTURY.—An account of the national movements of the nineteenth century and of those European political conditions which lie at the basis of modern world politics. Text-books, lectures, and readings. *II; (3).*

Professor FORD.

Prerequisite: History 1.

23. HISTORY OF MODERN ENGLAND.—This course is a continuation of History 11, and follows the same general plan; but less attention is given to internal political development and more to the colonial and imperial phases of English history, such as the settlement of America, the conquest of India, and the relations of

England with Ireland, Scotland, and the British possessions. *I*; (3). Assistant Professor LARSON.

Prerequisite: History I or II.

C. COURSES FOR GRADUATES AND QUALIFIED UNDERGRADUATES

No student is admitted to any of these courses without at least junior standing.

(The ability to use French and German is desirable in all of these courses and is essential in some of them).

4. CONSTITUTIONAL HISTORY OF ENGLAND.—During the first semester, the emphasis is placed on institutional origins; in the second semester particular attention is given to modern constitutional practice. *I, II*; (3). Assistant Professor LARSON.

Prerequisite: Either History I, or History II and 23.

8. MEDIEVAL CULTURE.—The main object of this course is to trace the intellectual development of medieval civilization. In the period of transition from pagan to Christian culture typical figures like St. Augustine, Boethius, and Gregory the Great are studied in some detail. In the twelfth and thirteenth centuries prominence is given to such topics as the strife over investitures, the crusades, rise of universities, vernacular literature, development of Gothic architecture, and scholasticism. *I*; (3).

Dr. PAETOW.

Prerequisite: History I.

9. THE ERA OF THE RENAISSANCE.—The political, religious, and economic history of Europe, during the fourteenth and fifteenth centuries, is considered, as well as the intellectual and artistic revival. This course is designed to be a continuation of course 8, although either may be taken separately. *II*; (3). Dr. PAETOW.

Prerequisite: History I.

13. AMERICAN REVOLUTION, 1760-1783.—The following topics will be considered: The American people and their institutions at the close of the colonial era; the causes of the Revolution, 1760-1775; a survey of the war period, 1775-1783, with special emphasis on economic, social, and political changes, rather than upon military and diplomatic transactions. *I*; (3). Professor GREENE.

Prerequisite: History 3.

14. THE MAKING OF THE FEDERAL CONSTITUTION.—This course provides for an intensive study, based upon original material, of the events from 1783 to 1789 which resulted in the framing and

ratification of the Federal Constitution. Special attention will be given to the proceedings of the Federal Convention of 1787 and the contemporary arguments for and against the ratification of the Constitution. *I*; (3). Professor GREENE.

Prerequisite: History 3.

15. THE CIVIL WAR AND THE RECONSTRUCTION OF THE SOUTHERN STATES.—This course begins with a careful study of life and institutions in various sections of the country just before the secessions of the southern states. In the treatment of the Civil War stress will be laid upon political and economic conditions rather than upon military campaigns. In the treatment of the reconstruction period emphasis will be laid upon southern conditions. *II*; (3).

Professor GREENE.

Prerequisite: History 3.

18. THE TEACHING OF HISTORY.—This course is intended to prepare students for the practical problems of historical teaching in secondary schools by giving them some knowledge of the literature of the subjects most commonly covered in the high school course and the kind of material available for illustrative purposes. Considerable attention is also given to the methods of historical teaching adapted to young pupils. Open to seniors only. *II*; (2).

Assistant Professor LARSON, assisted by other members of the department.

Prerequisite: History 1 and 3 or their equivalents.

22. AMERICAN HISTORY, 1820-1860.—Selected topics in social and political history. *II*; (3). Professor GREENE.

Prerequisite: History 3.

(Not given in 1909-10).

26. THE MODERN HISTORY OF SPAIN.—A rapid survey of the early history of Spain, followed by a closer study of the modern period. This course is intended to furnish a background for the study of Spanish colonization in America. *I*; (3).

Assistant Professor ROBERTSON

Prerequisite: Ten hours in history, including History 1. A reading knowledge of Spanish is also very desirable.

27. THE HISTORY OF LATIN AMERICA AND THE PHILIPPINES.—During the first semester the topics covered will be as follows: The discovery and exploration of the New World; the settlement, administration, and civilization of the Latin-American colonies; the struggles for independence. During the second semester the course

will provide a general survey of the history of the leading Latin-American countries since their separation from Europe. *I, II; (3).*

Assistant Professor ROBERTSON.

Prerequisite: Ten hours in history, including History 3. A reading knowledge of Spanish is also very desirable.

COURSES FOR GRADUATES

101. SEMINARY IN AMERICAN HISTORY.—The work of this course is of two kinds. The first consists of general exercises in which all the members of the class are expected to take part. In these exercises some attention will be given to the general bibliography of American history; but a large part of the time will be devoted to the cooperative study of typical problems. The problems selected for this purpose in 1909-10 will be drawn from the American revolutionary era, 1763-1783. The second part of the seminary work will consist of the preparation of a thesis, based upon the results of original research. *I, II.*

Professor GREENE and Associate Professor ALVORD.

102. STUDIES IN ENGLISH HISTORY.—The purpose of this course is to provide an opportunity for a closer study of some of the more important periods and movements of English history. The first semester of the year 1908-1909 was devoted to the study of the leading twelfth century chronicles; the second to the study of colonial expansion and colonial policies in the eighteenth century. *I, II.*

Assistant Professor LARSON.

103. HISTORICAL BIBLIOGRAPHY AND CRITICISM.—Selected problems in various fields are worked out under the guidance of the several instructors. Required of all candidates for an advanced degree in history who do not present evidence of similar training elsewhere. *I, II.*

Professor FORD, assisted by other members of the department.

104. SEMINARY IN MODERN EUROPEAN HISTORY.—The subject selected for 1909-10 is the influence of the French Revolution in Germany. *I, II.*

Professor FORD.

105. THE HISTORY OF WESTERN EXPANSION, 1763-1818.—The period indicated is covered by lectures and readings, but the main object of the course is the study of various problems in the interpretation of western history. *I, II.*

Associate Professor ALVORD.

106. THE FORMATION AND DEVELOPMENT OF BRANDENBURG-PRUSSIA FROM 1640 TO 1786.—This course gives an opportunity for somewhat detailed study of the work of the Great Elector, Frederick William I., and Frederick the Great. *I, II.* Professor FORD.

[Not given in 1909-10.]

107. SELECTED TOPICS IN THE HISTORY OF THE NINETEENTH CENTURY.—This course does not aim at a connected presentation of the whole period, but certain events, persons, and movements are selected for intensive study. Open to graduates and to qualified juniors and seniors on approval of the instructor. *I, II.*

Professor FORD.

108. FRENCH INSTITUTIONAL HISTORY DURING THE SEVENTEENTH AND EIGHTEENTH CENTURIES.—The gradual development of the institutions of the centralized government will be traced by means of a careful study of the fundamental laws. In a similar manner the methods adopted to promote economic development, particularly those concerned with commerce and colonial expansion, will be studied. *I.* Associate Professor ALVORD.

109. THE HISTORY OF THE FRENCH COLONIES IN AMERICA.—The history of French exploration and settlement in America will be studied, as far as possible, in the primary sources. Particular attention will be given to French colonial institutions and to the discovery and colonization of the Mississippi Valley. *II.*

Associate Professor ALVORD.

110. THE SPANISH-AMERICAN REVOLUTION.—A detailed study of the movements which culminated in the independence of the Spanish-American states. *I.* Assistant Professor ROBERTSON.

111. SPANISH-AMERICAN DIPLOMACY.—A consideration of the problems which have arisen in the relations of the leading Spanish-American states with Europe and the United States. *II.*

Assistant Professor ROBERTSON.

History 110 and 111 are open only to students who possess a reading knowledge of the Spanish language.

112. SELECTED TOPICS IN THE SOCIAL AND RELIGIOUS HISTORY OF THE AMERICAN COLONIES IN THE EIGHTEENTH CENTURY.—*II.*

Professor GREENE.

ECONOMICS

The department of economics includes general economics, economic history, finance, commerce, industry, railway administration and accountancy.

Courses 7, 22, and 26, English Economic History, the Economic History of the United States, and Economic Resources, or Commercial Geography, are open to freshmen without previous requirement. Courses numbered 101 and above are open to graduate students only.

COURSES FOR UNDERGRADUATES

1. PRINCIPLES OF ECONOMICS.—A beginners' course in the underlying principles of the science, *I*; (5).

Professor KINLEY and others.

Prerequisite: At least thirty hours of University work.

2. PRINCIPLES OF ECONOMICS.—This course is offered only to junior and senior students in the colleges of engineering and agriculture. Emphasis is laid on practical economics. *I*; (2).

Professor ROBINSON, Dr. THOMPSON. *II*; (2). Professor ROBINSON.

3. MONEY AND BANKING.—The history and theory of money, credit, and banking. *II*; (3). Assistant Professor WESTON.

Prerequisite: Economics 1.

4. FINANCIAL HISTORY OF THE UNITED STATES.—A study of colonial and federal finance, including currency, banking, tariff, and fiscal questions, and a brief survey of the development of the financial systems of some of the leading states, as New York and Illinois. *I*; (3).

Associate Professor WESTON.

Prerequisite: Economics 3 and History 3.

(Not given in 1909-10).

5. PUBLIC FINANCE.—A study of public expenditures, financial administration, taxation, and public debts. *I*; (3).

Assistant Professor WESTON.

Prerequisite: Economics 1, 3 and Political Science 1.

7. ENGLISH ECONOMIC HISTORY.—The industrial development of England is traced from the Manorial system, through the period of the guilds, the commercial policy and expansion of the seventeenth and eighteenth centuries, and the industrial and manufacturing growth of the nineteenth century. England is selected as a typical example to illustrate the evolution of a modern industrial

society from medieval conditions. Open to freshmen and sophomores only. *I*; (3). Associate Professor BOGART.

8. THE MONEY MARKET.—An advanced study of dealings in money and credit, the functions of money broker and banker, the concentration of financial dealings at such centers as New York and London, international payments and the determination of rates of foreign exchange, the seasonal demands for money, causes of fluctuation in rates of discount, monetary panics and crises; investments, and the financial aspects of dealings on the stock and produce exchanges. *II*; (2). Assistant Professor WESTON.

Prerequisite: Economics 9.

9. BANKING.—This is a course in the study of practical banking with special reference to the United States. *I*; (2.)

Assistant Professor WESTON.

Prerequisite: Economics 3 and senior standing.

10. CORPORATION MANAGEMENT AND FINANCE.—*I*; (3).

Professor ROBINSON.

Prerequisites Economics 1 and 3.

11. INDUSTRIAL CONSOLIDATIONS.—The development of industrial consolidations; the growth of monopoly; monopoly prices, wages, interest, and profits; and the proposed plans for controlling trusts. *II*; (3).

Professor ROBINSON.

Prerequisite: Economics 10.

12. LABOR PROBLEMS.—The first semester is devoted to a study of present labor conditions and to remedies proposed other than trade unionism. Attention is given to such evils as unemployed, poverty, woman and child labor, and improper housing. Remedial plans such as profit sharing, co-operation, and labor legislation are considered. The second semester is given more especially to an examination of labor organizations. The history of trade unions, internal organization, restrictions as to membership, collective bargaining, limitation of output, objections to piece work, strikes, boycotts, and injunctions are studied. The course during the second semester is open only to those students who take the first semester's work. *I, II*; (3).

Dr. TOWLES.

13. THE EVOLUTION OF INDUSTRIAL SOCIETY.—A study of the steps by which the human race has advanced from primitive conditions through various stages of development to the present western type of industrialism. In the second semester especial atten-

tion will be given to the recent economic history of the industrially more developed nations. *I, II; (2).* Associate Professor BOGART.

Prerequisite: At least sixty hours of University work; including History I and Economics I and 3.

16. ECONOMIC PROBLEMS.—Section A, consisting wholly of engineers, takes up the study of railway problems, taxation of corporations, and the labor question. Section C, composed of students from the College of Agriculture only, takes up special topics relating to agriculture. *II; Sec. A (2); Sec C (3).*

Professor ROBINSON, Dr. THOMPSON.

Prerequisite: Economics I or 2.

18. ECONOMIC SEMINARY.—*I, II; (4-8 for the year).*

Professor ROBINSON.

21. SOCIALISM AND SOCIAL REFORM.—A study is made of the historically important socialistic theories, chief attention being given to the socialism of Karl Marx and the resulting social movements. *II; (3).*

Dr. TOWLES.

Prerequisite: Economics I and 3.

22. THE ECONOMIC HISTORY OF THE UNITED STATES.—Beginning with the explorations and settlements that led to the colonization of this continent, the growth of industry, agriculture, commerce, transportation, and labor is traced from the simple, isolated agricultural communities of the colonies to the complex industrial and commercial society of today. The various economic and industrial problems that have presented themselves to the people of this country at different periods are studied, and especial attention is given to present day problems in their historical relations. Open to freshmen and sophomores only. *II; (3).*

Associate Professor BOGART.

24. STATISTICS.—The following courses in statistics are given by the mathematical department.

MATH. 31. ACTUARIAL THEORY.—A detailed study of the application of probability to life contingencies, the construction and graduation of mortality tables, the elements of fire insurance, and the calculation of premiums for various types of life and fire insurance. *I; (3).*

Assistant Professor RIETZ.

Prerequisite: Mathematics 8a and 29 and, for students of economics Economics 33. [Not given in 1909-10.]

MATH. 23a. AVERAGES AND THE MATHEMATICS OF INVESTMENT.

—The meaning, use, and abuse of different kinds of averages. The relation of the theory of probability to averages, and the application of the elements of probability to annuities, insurance, and various branches of science. Such information relating to loans and investments as can best be put into algebraic language, and are of interest to the general student. Many practical problems are given in the valuation of investment securities. *II; (3).*

Assistant Professor REITZ.

Prerequisite: Mathematics 2 and junior standing.

MATH. 29. THEORY OF STATISTICS.—The general methods of statistical investigation, the application of the theory of probability of statistical data, the fitting of curves to observation, interpolation, the theory of errors, and, and the mathematical theory of variability and correlation, the application of principles developed to problems in economics and biology. *I, II; (3).* Assistant Professor REITZ.

Prerequisite: Mathematics 8a.

26. ECONOMIC RESOURCES (COMMERCIAL GEOGRAPHY).—A study of the various conditions which affect commercial and industrial development, followed by a somewhat detailed consideration of the more important products and industries of different countries. Special emphasis is laid upon the extent and distribution of the resources and the industrial and commercial activities of the United States. It is advisable that students taking this course elect the courses in physical geography (Geology 14 and 8) at the same time. *I, II; (3).*

Dr. LITMAN.

28. DOMESTIC COMMERCE AND COMMERCIAL POLITICS.—The course deals with the principles and methods of buying and selling in internal trade, discussing the various forms of wholesale and retail trade organizations; department, mail-order and co-operative stores; markets, fairs, auctions; stocks and produce exchanges; commercial competition; theory and practice of modern advertising; commercial travellers; mercantile credit, etc. *I; (3).*

Dr. LITMAN.

Prerequisite: Economics 1, 3, 7, 22 and 26. [Not given in 1909-10].

29. FOREIGN COMMERCE AND COMMERCIAL POLITICS.—Problems arising in connection with international trade relations, and various attempts to solve them; changes in theories and in policies; economic systems (mercantile, free trade, protective); classes of cus-

toms tariffs; commercial treaties; institutions for furthering export trade (commercial museums and bureaus of information, sample houses, consular reports, etc). *II*; (3). Dr. LITMAN.

Prerequisite: Economics 28. [Not given in 1909-10].

30. **TARIFFS AND CUSTOMS REGULATIONS OF THE UNITED STATES.**—A study of the history of tariff legislation in the United States, followed by a discussion of the present tariff system; the organization and the work of the custom house; entry of goods; bonded warehouses, etc. *I*; (3). Dr. LITMAN.

31. **COMMERCIAL RELATIONS OF THE UNITED STATES.**—A study of the trade relations of the United States with foreign countries, a review of the problems confronting our manufacturers and exporters in connection with sales abroad; various methods and suggestions offered for the development of our foreign trade. *II*; (2). Dr. LITMAN.

Prerequisite: Economics 1, 7, 26, and six hours of modern history. [Not given in 1909-10].

3. **ECONOMICS OF INSURANCE.**—The historical development of insurance, and an extended discussion of its economic aspects. The various forms of insurance—fire, accident, employment, and life—from the standpoint of internal organization and from that of social service. Rates, policies, investments, corporate management, accounting, public supervision, and insurance law. *I*; (2).

Professor ROBINSON.

Prerequisite: Economics 10.

35. **CONSULAR AND DIPLOMATIC SERVICE.**—The basis of this course is the consular and diplomatic relations of the United States, though a careful study is also made of the duties and functions of consuls in general, as well as of the foreign service of the leading commercial nations. *II*; (3). Dr. LITMAN.

Prerequisite: Economics 28, 29, 30.

36. **ORGANIZATION OF OCEAN COMMERCE.**—The course considers the most important trade routes of the world; charter and line traffic; passenger and freight rates; governmental supervision and control of shipping; modern harbor facilities, etc. *II*; (3).

Dr. LITMAN.

Prerequisite: Economics 28 and 29.

41. **RAILWAY HISTORY AND ORGANIZATION.**—A history of the railway development of the United States, prefaced by a description

of transportation conditions prior to the introduction of the steam railway. Growth of network, financial policy, traffic and operating developments are all treated in some detail, and the course concludes with a study of modern railway organization. *II*; (3)

Professor DEWSNUP.

42. RAILWAY ADMINISTRATION.—This course deals in detail with (1) railway finance and taxation, (2) theory of rates, and (3) state administration in the United States and abroad. *II*; (3).

Professor DEWSNUP.

Prerequisite: Economics 1 and 41; for engineers, Economics 2, 41.

43. TRAFFIC ADMINISTRATION.—The work of the freight and passenger traffic departments is treated with reference to general problems, classification of business, stimulation of business by advertising and other means, necessary forms and reports, special traffic claims, classifications and traffic, interrelation of railways in traffic matters. *I*; (3).

Professor DEWSNUP.

Prerequisite: Economics 1; for engineers, 2; current registration or previous credit in 41.

44. RAILWAY TRANSPORTATION.—The train service, train despatching, and the block system of train working will be emphasized. In connection with this, the subject of train speed and train accidents will be given some attention. The handling of the passenger service and some study of passenger terminal facilities will be included in the course. *II*; (2).

Professor DEWSNUP.

Prerequisite: Economics 1; for engineers 2; current registration or previous credit in 42.

45. RAILWAY PRACTICE.—A careful study of the design of steam tracks, freight houses and yards, with reference to economy and expedition of operation; methods of operation; fast freight service; car service and demurrage arrangements. *I*; (2).

Professor DEWSNUP.

Prerequisite: Economics 1; for engineers, 2; current registration or previous credit in 41. [Not given in 1909-10].

47. FOREIGN RAILWAY SYSTEMS.—A general study of some one foreign railway system, varying from time to time. The organization, methods of operation, and political and other relations of the system will be detailed. *II*; (2).

Professor DEWSNUP.

Prerequisite: Economics 42. [Not given in 1909-10].

48. THE ECONOMIC PROBLEM OF THE INTERURBAN RAILROAD.—The financing, management, and economic and social effects of the electric interurban railroad and its relation to the steam road. *II*; (2). Professor DEWSNUP.

Prerequisite: Economics 42. [Not given in 1909-10].

49. ECONOMIC THEORY OF RAILWAY LOCATION.—The consideration of railway location from the standpoint of economics, supplementing the engineering theory. *I*; (1). Professor DEWSNUP.

Prerequisite: Economics 42. [Not given in 1909-10].

COMMERCIAL LAW (Law B).—The work covers the chief principles underlying the law of contracts, negotiable instruments, agency, partnerships, business corporations, sales of personal property, bailments and carriers, guaranty and suretyship, and insurance. *II*; (3). Professor HUGHES.

Prerequisite: At least 60 hours of University credit, including Economics 1 or 2 and Accountancy 1.

COURSES FOR GRADUATES

101. RECENT ECONOMIC THEORY.—*I, II*; (2).

Professor KINLEY.

[Not given in 1909-10].

102. ADVANCED GENERAL ECONOMICS.—An advanced course covering the whole field with detailed discussion of certain parts. *I, II*; (2). Professor KINLEY.

103. SEMINARY IN RAILWAY ADMINISTRATION.—Advanced students in this subject make an investigation of some aspect of railway administration. *I, II*. Professor DEWSNUP.

104. SEMINARY IN COMMERCE.—A study of present international commercial relations, with special reference to the trade conditions of the United States and the extension of her trade in foreign markets. *I, II*. Dr. LITMAN.

105. PUBLIC FINANCE.—*I, II*; (2).

Assistant Professor WESTON.

(Not given in 1909-10).

106. RAILWAY POLICY.—A study of various policies and problems in the United States and abroad. *I, II*.

Professor DEWSNUP.

107. THE CORPORATION IN ECONOMIC EVOLUTION.—*I, II.*

Professor ROBINSON.

[Not given in 1909-10].

108. COMPARATIVE CORPORATION ORGANIZATION.—*I, II.*

Professor ROBINSON.

118. SEMINARY.—The special subject of study for 1909-10 will be announced in due course. *I, II.* Professor KINLEY and others.

120. HISTORY OF ECONOMIC THOUGHT.—*I, II (2).*

Dr. THOMPSON.

[Not given in 1909-10].

122. ADVANCED ECONOMIC HISTORY OF THE UNITED STATES.—In this course an effort will be made to show the part which economic factors have played in the history of our country. The connection between economic and political movements will be noted, and careful studies will be made of particular phases of our economic history, such as the westward movement and the settlement of the public lands. The seminary method will be followed, and each student will prepare during the semester at least one thesis on an assigned topic which will be read and discussed in class. *I, II; (2).*

Associate Professor BOGART.

ACCOUNTANCY

1. PRINCIPLES OF ACCOUNTING.—This course is the foundation of all work in accounting. The student is made familiar with the keeping of accounts of various kinds of businesses, mercantile, industrial and financial; the accounting for various types of business organizations, individuals, partners, and corporations; the changing from partnership to corporation, the handling of journal entries, the closing of accounts, the changing from double to single entry; the methods of preparing the industrial and commercial statistics of a plant, a study of the methods of handling statistics for the purpose of making proper deductions as to the efficiency of departments, and the soundness of business policy. *I, II; (2).* *If elected, this course must be taken through the year in order to secure any credit at all.*

Assistant Professor DUNCAN.

Prerequisite: Thirty hours of University credit, registration in Economics 1, and a knowledge of the principles of bookkeeping.

2. COST ACCOUNTING.—The scope of cost accounting, the relationship of the various elements of cost to each other, and the methods of recording the same for various types of industries.

The designing and installing of cost systems for typical industries. The course may be taken simultaneously with course 1. II; (2).

Assistant Professor DUNCAN.

Prerequisite: Accountancy 1.

3. INDUSTRIAL ACCOUNTING.—A study of the various types of industries, the methods of installing accounting systems to suit their technical peculiarities, for the purpose of revealing efficiency in management; the handling of departmental accounts. This course may be taken simultaneously with course 1. II; (2).

Assistant Professor DUNCAN.

Prerequisite: Accountancy 1.

4. ADVANCED ACCOUNTING.—*Theory:* This part of the course includes the consideration of the various types of accounting, the handling of capital, revenue, dissolution of partnership, realization, liquidation, insolvency, good-will, treatment of bad debts, suspense, maintenance, depreciation, reserve and sinking funds, contingent funds, secret reserves and the like.

Practical Accounting: The second part of the course includes the working out of difficult accounting problems, applying the principles covered in the theoretical part of the course, the analysis of reports of railway, financial and industrial corporations. *The course, if elected, must be taken throught the year. I, II; (3).*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 1, and registration in either the two-year or the four year course in accountancy or railway traffic and accounting. *The course is not open to students in other courses except by permission of the instructor, the director of the school and the dean of the college.*

5. AUDITING.—Discussion of the duties and responsibilities of an auditor, the kinds of audits that can be made, the value of each, the auditor's report, what it should contain, his certificate, its value, the preparation of audit reports. *For students of accountancy only. I; (2).*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 4, or 1 and registration in Accountancy 4.

6. TRUSTEE AND RAILROAD ACCOUNTING.—Discussion of the rights and duties of executors and trustees, proper accounting methods for trusteeships, railroad accounting, the handling of rail-

road revenue accounts, including freight, passenger, express, and other earnings from the road and allied companies, the treatment of operating expenses, fixed charges, the work of the Interstate Commerce Commission in standardizing railway accounting methods. *II; (2). For students of accounting and railway traffic and accounting only.*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 4, or 1 and registration in 4.

10. SHOP MANAGEMENT AND COST KEEPING.—A study is made of the various types of industries, how they influence plant layouts, the laborers needed, the material used, methods of handling. A discussion is made of the best types of records suitable for each type of industry in order to approximate costs of manufacture and to determine and compare the efficiencies of departments, of individual workers, of methods of production and the like. The course is presented from the standpoint of the engineer and shop manager. *II; (2).*

Assistant Professor DUNCAN.

Prerequisite: Open only to Engineering students who have had Economics 1 or 2.

POLITICAL SCIENCE

COURSES FOR UNDERGRADUATES

Courses 1, 3 and 4 listed below are intended to furnish a general survey of the field of national, state, urban, and local government in the United States and should be taken by all students who expect to specialize in political science.

1. AMERICAN FEDERAL GOVERNMENT.—A course introductory to the study of national government in the United States, particular emphasis being given to historical development, organization, powers, limitations, and practical working. *I; (3).*

Professor GARNER and Mr. POWELL.

Prerequisite: At least 30 hours of University work.

3. AMERICAN STATE GOVERNMENT.—A study of the evolution of the American state constitution from the colonial charter; powers, rights and obligations of states under the Federal Constitution; methods of formation and of admission to the Union; comparative study of the organization of commonwealth government; constitutional resemblances and diversities. *II; (3).* This is intended to

be a continuation of course I though either may be taken independently of the other.

Professor GARNER.

Prerequisite: At least 30 hours of University work.

4. MUNICIPAL GOVERNMENT.—An introductory study of the organization of city government in the United States. Emphasis is given to the causes which have led to the growth of cities; the powers and liabilities of municipal corporations; and the problems of governing the modern municipality, particularly those relating to urban transportation, police, light and water supply, charities, education, municipal ownership of public utilities, etc. Lectures, assigned readings and reports. II; (2).

Professor GARNER

Prerequisite: Course I or 2 or the equivalent of either.

9. ELEMENTS OF JURISPRUDENCE.—The origin, growth and nature of positive law. A systematic arrangement and analysis of the concepts of law. II; (3).

Mr. POWELL.

16. THE ADMINISTRATION OF ILLINOIS.—A study of the governmental organization and administration of the state, including the legislature, the judiciary, the executive, state officers and institutions, and the system of local government. I; (2).

Associate Professor FAIRLIE.

COURSES FOR GRADUATES AND QUALIFIED UNDERGRADUATES

2. EUROPEAN GOVERNMENTS.—A comparative study of the national political systems of Great Britain, France, Germany, Austria-Hungary, Italy, and Switzerland, with special reference to constitutional beginnings, political organization, methods of legislation and administration, and constitutional guarantees for the protection of individual rights. Open to seniors, and graduate students who have had at least six hours of work in Political Science. I; (3).

Professor GARNER.

5. THE FEDERAL CONSTITUTION.—An exposition and analysis of the federal system of the United States through a study of the origin and nature of the federal constitution and its development through judicial decision. The constitution in its relation to the geographical divisions of the United States. Jurisdiction of the Federal Courts. State and national citizenship. Powers of the national government in matters of taxation, commerce, money, war and foreign relations, and consequent limitations on the powers of

the states. Effect of later amendments on the federal system. Study of leading cases will be supplemented by text-book work and lectures. Open daily to students who have had courses I and II or their equivalent. *I*; (3). Mr. POWELL.

6. INTERNATIONAL LAW.—The development of the law of nations; its nature, source, and present status; the equality of states; the doctrine of intervention; the laws of war and peace; the rights and duties of neutrals; the arbitration movement. Lectures, assigned readings and reports. Open to seniors and graduate students. *II*; (3). Professor GARNER.

7. AMERICAN DIPLOMACY.—A study of the genesis and present organization of the Department of State; the diplomatic service; the treaty making power; the methods and traditional principles of the foreign policy of the United States; historical review of the principal diplomatic controversies between the United States and foreign powers from the foundation of the government to the present time; the rise of the United States to the position of a world power. Open to seniors and graduate students only. *I*; (2). Professor GARNER.

8. THE LAW OF TAXATION.—Constitutional limitations on the taxing power. Legal rules governing the assessment and collection of taxes. Study of leading cases. *I*; (2). Mr. POWELL.

Prerequisite: Economics 5 and Political Science I.

15. POLITICAL PHILOSOPHY.—See Philosophy 5.

10. ADMINISTRATIVE LAW.—The nature of administrative law and its relation to constitutional law. The principle of the separation of powers as a rule of law and judicial control over administrative officials. Legal powers and liabilities of public corporations as administrative authorities. Comparison of American and foreign theories of administrative law. Open to graduate students and those who have taken course 5. Study of cases, text book work and lectures. *II*; (3). Mr. POWELL.

11. PUBLIC OFFICERS.—The nature of public office. Judicial control over the appointment, election, qualification, and removal of public officers and the exercise of official authority. Legal liability of officers. Extraordinary legal remedies. Open only to graduates and students who have taken course 10. Study of cases. *II*; (2).

Mr. POWELL.

12. NATIONAL ADMINISTRATION IN THE UNITED STATES.—A study of the administrative powers of the President and Congress, the executive departments and the administrative services of the national government, including a survey of judicial administration and the relation of the courts to the administrative authorities. *I*; (2). Associate Professor FAIRLIE.

Prerequisite: Course 1.

13. STATE AND LOCAL ADMINISTRATION IN THE UNITED STATES.—A study of the administrative powers of the state executive and legislature, of state officers and institutions, and the systems of local government, including the relations between state and local authorities and between the courts and administrative officials. *II*; (3). Associate Professor FAIRLIE.

Prerequisite: Course 3.

COURSES FOR GRADUATES

101. MUNICIPAL ADMINISTRATION.—This is an advanced course dealing, in the first semester, with the development of cities, the organization of municipal government and its relation to the Central government, and political methods and reform movements in cities. Comparisons will be made between conditions in the United States and European countries and recent tendencies in this Country will be discussed. In the second semester an examination will be made of municipal functions in the United States and Europe, including police, fire, and health departments, schools and charities, municipal public works, street railways, lighting plants, etc. The work of each semester may be taken independently of the other. *I, II*; (3). Associate Professor FAIRLIE.

102. THE NATURE OF THE STATE.—The principles, methods, and relations of political science; the origin, nature, forms, and function of the state; sovereignty and liberty; citizenship and nationality; constitutions, principles of political organization, etc. *II*; (1). Professor GARNER.

104. SEMINARY IN POLITICAL SCIENCE AND PUBLIC LAW.—The investigation of special problems. Presentation of reports followed by discussions and criticism. The research work of candidates who are writing thesis will be under the personal supervision of some individual instructor, to whom they will be expected to report from time to time. *I, II*.

SOCIOLOGY

1. GENERAL SOCIOLOGY.—Essential notions involved in the application of scientific method to social interpretation; principles of causation operative in determining prevalent social realities; relations between the life of the individual and of society, etc. Fundamental for lawyers, teachers, journalists and other social workers. *I*; (3).

Professor HAYES.

Prerequisite: Junior standing or equivalent preparation. If possible Psychology 1 and 7 should precede this course.

2. SOCIAL CONTROL.—An explanation of the methods by which society controls the conduct, beliefs, and desires of its members, by law, religion, education, public opinion, and other and subtler agencies; together with a study of the rational motives of conduct revealed by analysis of the facts of social life. *II*; (3).

Professor HAYES.

Prerequisite: Sociology 1.

3. COMPARATIVE AND GENETIC SOCIOLOGY.—A description and comparison of different modes of social activity (economic, political, legal, ethical, religious, domestic, etc.) as they prevail or have prevailed among people at different stages of progress, savage, barbarous and civilized; inductions from such facts, including a theory of social evolution and of the method of progress. *I*; (3).

Professor HAYES.

Prerequisite: The same as for Sociology 1. It is desirable that Sociology 1 precede or accompany this course.

4. PSYCHOLOGICAL SOCIOLOGY.—The conditioning of social activities by each other; public opinion, public sentiment, leadership, mobs, fashion, customs, conventionality, periods of social productivity and decay, etc. *II*; (3).

Professor HAYES.

Prerequisite: Sociology 1.

5. CHARITIES AND CORRECTIONS.—The causes, prevention, and treatment of poverty and crime. *II*; (3).

Professor HAYES.

Prerequisite: Sophomore standing or equivalent preparation, including at least one semester's work in economics or political science.

12. THE LABOR PROBLEM.—Identical with Economics 12.

21. SOCIALISM AND SOCIAL REFORM.—Identical with Economics

21.

COURSES FOR GRADUATES

Only one of the three courses described below will be given in 1909-10.

101. **SOCIOLOGICAL METHOD.**—A study of the method of advancing the science of sociology, especially a discussion of the adaptability to sociological investigation of the methods described in certain important works on methodology, for example, Pearson's Grammar of Science, Wundt's Methodenlehre, erster und vierter Abschnitt, Seignobos's Le Methode Historique Appliquée aux Sciences Sociales. *I.* Professor HAYES.

This course is intended for graduate students who have taken or are completing courses 1, 2 3, 4, and 5.

102. **THE DEVELOPMENT OF SOCIOLOGY.**—A reading course in the original works of the writers who have contributed most to the development of sociology, accompanied by discussions with the instructor. *I, II.* Professor HAYES.

Prerequisite: A good reading knowledge of either German or French.

150. **SEMINARY.**—*I, II;* one session of two hours each week. Credit according to work done. Open to graduates only.

Professor HAYES.

HOUSEHOLD SCIENCE

1. **PRINCIPLES OF THE SELECTION AND PREPARATION OF FOOD.**—The nature and uses of food, its chemical composition, and the changes effected by heat, cold, or fermentation. Practical illustrations of the principles of selection are given by marketing expeditions. Some of the processes of the manufacture of food are considered, as well as the combinations of different kinds. *II;* (3). Assistant Professor VAN METER, Miss CRIGLER.

Prerequisite: Entrance credit in physics; Chemistry 1.

2. **HOME ARCHITECTURE AND SANITATION.**—The situation, surroundings, and construction of the house; the hygiene of the home; heating, lighting, ventilation, water supply, and drainage. Lectures

on house planning, with exercise in making skeleton plans, and on sanitary plumbing and fixtures and internal drainage. *I*; (2).

Professor WHITE, Miss GIBBS, Mr. CLARK.

3. ELEMENTARY HOME DECORATION.—A continuation of Course 2. Lectures on the evolution of the house and the homes of primitive peoples, the theory of color and its application in home decoration. The evolution of the home, furnishings from a sanitary and artistic standpoint. *II*; (2). Professor BEVIER, Professor RICKER.

Prerequisite: Art and Design 1, Architecture 41, and Household Science 2.

4. FOOD AND NUTRITION.—An application of the principles of pure science to the problems of food and nutrition. The problems may be physiological, chemical, or bacteriological. Each student investigates some particular problem. *I*; (5).

Dr. GOLDTHWAITE, Assistant Professor USHER.

Prerequisite: Botany 5; Chemistry 1, 2 and 3, 13a, 9 and 9c; five hours in Botany or Zoology; Household Science 1, 6, 5.

5. DIETICS.—The work in dietics includes the following topics: The principles of diet; the relation of food to health; influence of age, sex, and occupation on diet; the construction of dietaries; dietetic treatment of certain diseases; principles of home nursing. Laboratory practice is given in the course. *II*; (3).

Assistant Professor USHER.

Prerequisite: Household Science 1, 6; Physiology 4.

6. ECONOMIC USES OF FOOD.—This course is a continuation of Course 1. Emphasis is put upon the economic side of the food question. The uses and application of preservatives are considered. *I*; (3).

Assistant Professor VAN METER.

Prerequisite: Household Science 1.

7. TEXTILES.—The development of primitive industries, production of fibres used in textile manufacture. Practice is given in judging cloth and in the application of the principles of selection of color and design in costumes. *I*; (2).

Miss GIBBS.

12. HOUSEHOLD ART.—A continuation of Course 7. Materials suitable for various uses in home and in clothing; consideration of texture, of quality, of design in relation to form; of color in relation to environment and personality; hygienic properties and cost. *II*; (2).

Miss GIBBS.

Prerequisite: Household Science 7; Art and Design 1; Architecture 41.

9. SEMINAR.—A study of various topics of home economics and individual problems in some one of these topics. II; (3).

Open to seniors only.

10. HOUSEHOLD MANAGEMENT.—This course deals with the organization of the household; expenditure of income; care of the house and family, including the cleaning of metals, woods, fabrics, and other essentials of a well ordered home. I; (2).

Assistant Professor VAN METER.

Open to juniors and seniors.

Prerequisite: Household Science 1, 6, 5; Economics 1.

11. TEACHERS' COURSE.—This course is designed for the prospective supervisor of the subject, or teacher in the graded schools. It aims to show the best method of presenting the work, and its correlation with other subjects. Practice is afforded in planning such courses, and some opportunity for presenting them. II; (2).

Professor BEVIER, Miss PINCOMB.

Open to seniors.

Prerequisite: Household Science 1, 2, 3, 5, 6, 7, 12, 13.

13. HISTORY OF THE HOME ECONOMICS.—This course aims to make the student intelligent concerning the origin and development of home economics. It includes a study of the work in various types of institutions, and the planning of courses for these types. I; (1).

Assistant Professor USHER.

Open to juniors and seniors.

14. SPECIAL PROBLEMS IN CONNECTION WITH THE SERVICE OF FOOD.—This course is a continuation of Course 6 and deals with the problems of marketing, domestic storage, management of menus, and utilization of wastes food materials as modified by special conditions. II; (3).

Assistant Professor VAN METER.

Prerequisite: Household Science 6.

15. THE ECONOMICS OF THE FAMILY GROUP.—This course is a study of the history and various forms of the family, with special reference to its economic organization for securing, distributing, and expending its income, and its relations as an economic and social unit to other economic and social units in the community. It in-

cludes, therefore, the consideration of such topics as the industrial organization of the family; money, and other income; the laws of consumption and the interplay of economic, physiological and psychological motives in expenditure and consumption; the reaction of the changing forms of modern industry on family industry; the economic, social and legal relations of the members of the family; the economic position of woman in modern society; the domestic servant problem, retail and wholesale markets, etc. *I, II; (3).*
 Assistant Professor VAN METER.

Prerequisite: Household Science 3, 10, 12, 14, Sociology 1, Economics 1, Philosophy 6 and 8.

16. PROBLEMS IN THE ECONOMICS OF THE FAMILY GROUP.—This is an advanced course dealing intensively with special problems treated in a general way in course 15. The work is individual and is done in the senior seminar in economics. *I, II; (2-4).*

Professor KINLEY.

Prerequisite: Household Science 15.

COURSES FOR GRADUATES

101. HOME ECONOMICS.—A study of the origin and development of home economics, with particular reference to its industrial, educational, and sociological aspects.

Professor BEVIER.

102. SPECIAL INVESTIGATION.—Problems in the application of the principles of bacteriology, chemistry, and physiology, to the ordinary processes used in the preparation of food.

Professor BEVIER.

PHILOSOPHICAL STUDIES

PHILOSOPHY

Students who make philosophy a major should take at least one year of psychology. With the exception of 1 and 10, no course may be taken before the completion of two years of University work.

1a. LOGIC.—An introductory course dealing with the principles of reasoning, with special reference to the detection of fallacies and to the study of evidence. *I; (3).*

Professor BODE.

Prerequisite: One year of University work

1b. LOGIC.—Same as 1a. II; (3). Professor BODE.

Prerequisite: One year of University work.

2. INTRODUCTION TO PHILOSOPHY.—The relation of philosophy to modern science; the problem of philosophy; and the more representative form of philosophic theory. II; (3). Professor BODE.

3. ANCIENT AND MEDIEVAL PHILOSOPHY.—A rapid survey of the development of speculative thought, beginning with the early Greek philosophers and continuing through the Medieval period. I; (3). Mr. BECKER.

4. MODERN PHILOSOPHY.—The formation and development of the problems and conceptions in philosophy from Descartes to the present time. Selections from the philosophical masterpieces of this period. II; (3). Mr. BECKER.

5. POLITICAL PHILOSOPHY.—Philosophical theories of the state, historical, critical, and constructive. The nature of the state, fundamental political principles, natural law, and natural right. II; (2). Mr. BECKER.

7. ETHICS.—The beginnings and growth of morality; analysis and criticism of the leading conceptions of moral theory; discussion of some of the typical social and economic problems of the present. I. (3). Mr. BECKER

Prerequisite: Three hours in philosophy.

8. ESTHETICS.—Theory of the appreciation of art and nature; place of such appreciation in life. (a) Primitive arts and appreciation. (b) Modifications of the esthetic (such as the sublime and the ugly). (3) Prime characteristics and relations of the various fine arts. I; (3). Dr. NORTON.

Prerequisite: An elementary course in philosophy or psychology.

9. POLITICAL AND SOCIAL ETHICS.—A study of moral principles in their application to political and social relations. I; (2).

Professor DANIELS.

(Not given in 1909-10).

10. THE PHILOSOPHIC THOUGHT OF THE NINETEENTH CENTURY AS REFLECTED IN ENGLISH LITERATURE.—A study of Wordsworth, Carlyle, Emerson, Tennyson, Browning, and Arnold. I; (2).

Professor BODE.

11. HISTORY AND PHILOSOPHY OF RELIGION.—An historical and comparative study of religions. The philosophical interpretation of

religious consciousness and a critical study of various religious concepts; God, revelation, inspiration, dogma, faith, prayer, immortality, the problem of evil, the relation of morality and religion. Open to senior and graduate students only. *I, II; (2).*

Professor DANIELS.

Prerequisite: Six hours in psychology, philosophy, or both. (Not given in 1909-10.)

12. THE PRINCIPLES OF KNOWLEDGE AND THE METHOD OF SCIENTIFIC INVESTIGATION.—An advanced course in real logic beginning with a thorough review of the principles of formal logic covered in course 1. The chief methodological presuppositions of the mathematical, the physical, the biological, the psychological, and the philosophical sciences. *I; (3).*

Mr. BECKER.

Prerequisite: Philosophy 1, and either 3 or 4.

14. SEVENTEENTH CENTURY PHILOSOPHY.—Descartes, Spinoza, and Leibniz. *II; (3).*

Mr. BECKER.

Prerequisite: Philosophy 2, or 3, or 4.

15. THE BRITISH PHILOSOPHERS OF THE EIGHTEENTH CENTURY.—Locke, Berkeley, and Hume. *I; (3).*

Professor BODE.

Prerequisite: Philosophy 2, or 3, or 4.

16. KANT.—The Critique of Pure Reason. *II; (2).*

Professor BODE.

Prerequisite: Philosophy 15.

COURSES FOR GRADUATES

101. THE PHILOSOPHY OF PLATO AND ARISTOTLE—*I, II;*
(Not given in 1909-10.)

Professor DANIELS.

102. SEMINARY.—Theory of Knowledge. The methods and presupposition of knowledge in relation to present day realism and pragmatism. *I, II.*

Professor BODE.

PSYCHOLOGY

Students who do major work in psychology should take a minimum of six hours in philosophy, four of which will be counted as a part of the total number of hours required for the major in psychology. The courses specially advised are Philosophy 3a and 4. The attention of the student majoring in psychology is called

also to Zoology 5 (Animal Behavior), and Zoology 7. (The Structure and Function of the Vertebrate Nervous System).

Psychology 1 and 7 offer a continuous course and cannot be taken separately for credit. These courses are the prerequisites for all further courses in psychology. No student may do graduate work in psychology without having had these two introductory courses and at least three credit hours in philosophy.

INTRODUCTORY COURSES

1. **ELEMENTARY PSYCHOLOGY.**—This course is intended for beginners in psychology. It deals with sensation, imagination, perception, attention, the higher intellectual faculties, and the affective life. This course is offered in three sections and must be followed by course 7 if the student wishes to receive credit. It should not be taken later than the junior year. *I; (3).*

Professor COLVIN, Assistant Professor BAIRD.

Prerequisite: One year of University work.

7. **THE PSYCHOLOGY OF THE EMOTIONS AND THE WILL.**—This course is a continuation of Psychology 1. It considers critically the principal phenomena of volition and feeling as distinguished from those of the intellect. Illustrations will be taken largely from biography, history, and literature. *II; (3).*

Professor COLVIN, Assistant Professor BAIRD.

Prerequisite: Psychology 1.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

No student is admitted to any of these courses without at least junior standing.

3. **EXPERIMENTAL PSYCHOLOGY.**—This course aims to give the student an intimate acquaintance with normal mental processes, and to train him in the use of psychological methods. The course consists of two two-hour periods in the laboratory weekly, and one lecture a week. *I; (3).* Assistant Professor BAIRD, Mr. DALLENBACH.

The registration in this course is limited to 25 students.

Prerequisite: Psychology 1 and 7.

4. **EXPERIMENTAL PSYCHOLOGY.**—This is a continuation of Course 3 and cannot be elected separately. Lectures and laboratory work, *II. (3).* Assistant Professor BAIRD, Mr. DALLENBACH.

Prerequisite: Psychology 1, 3 and 7. The registration in this course is limited to 25 students.

5. GENETIC PSYCHOLOGY.—This course considers the development of the child from infancy through adolescence. The development of the nervous system and growth of the body are traced in connection with the mental development. *II; (2).*

Professor COLVIN, Dr. KUHLMANN.

Prerequisite: Psychology 1, 3 and 7.

6. COMPARATIVE PSYCHOLOGY.—This course aims at an analysis of animal behavior and its interpretation. Special attention will be given to the sensory equipments of animals, trophisms, instinctive behavior, acquired habits, the analysis of the learning processes in animals, and animal intelligence. *I; (2).* Dr. KUHLMANN.

Prerequisite: Psychology 1 and 7.

9. PHYSIOLOGICAL PSYCHOLOGY.—In this course the growth and structure of the central nervous system and of the sense organs are outlined; the characteristics of sensation and its place among the elements of consciousness discussed, and the functions and psychology of the various sense organs presented. The physiological basis of the emotions is also considered. *II; (2).*

Assistant Professor BAIRD.

Prerequisite: Psychology 1 and 7.

(Not given in 1909-10).

12. MINOR PROBLEMS IN EXPERIMENTAL PSYCHOLOGY.—This is an advanced laboratory course in which special investigations are undertaken by the student. *I, II; (2 to 5).*

Professor COLVIN, Assistant Professor BAIRD, Dr. KUHLMANN.

Prerequisite: Psychology 3 and 4. Registration in this course is limited to 5 students.

COURSES FOR GRADUATES

101. RESEARCH.—Opportunity to investigate advanced problems in experimental psychology, and in comparative and genetic psychology is offered to properly qualified graduate students. *I, II.*

Professor COLVIN, Assistant Professor BAIRD, Dr. KUHLMANN.

102. CONTEMPORARY LITERATURE.—This course considers the

most important problems of contemporary psychology with their historical bearings. *I, II.* Professor COLVIN.

III. THE PSYCHOLOGY OF THE INTELLECTUAL PROCESSES.—A critical discussion of sensation, preception, attention, memory, imagination, judgment, and reasoning. *II.* Assistant Professor BAIRD.
(Not offered in 1909-1910.)

III. ABNORMAL PSYCHOLOGY.—This course considers the pathological aspects of consciousness. It discusses arrested mental development in children and the main forms of mental disorders in later life. Particular attention will be given to the former, with a special consideration of the general conditions that lead to arrested development in children, and to impairment of mental efficiency in adults. *I.* Dr. KUHLMANN.

II. THE PSYCHOLOGY OF MEMORY.—This course will give a critical survey of the field. The following will be the main topics: The functions of memory in guiding behavior and action; the dependence of memory on the sense departments, on the name of things to be remembered, on age, and on general intelligence; the analysis of the memory consciousness; interpretations of memory curves, imagery types, associative aids, etc.; unconscious falsifications of memory; memory in the acquisition of skill; practice curves, the analysis of consciousness in the different practice stages. Two lectures a week, and two hours of laboratory demonstration. *II.* Dr. KUHLMANN.

EDUCATION

The courses of the department fall into two general divisions: Courses primarily for professional training, and courses more specifically designed for general culture. The first division includes courses 1, 3, 4, 5, 6, 11, 14, 15, 101; the second division courses 2, 13, 16, 17, 18. Students majoring in education will be required to take a minimum of three hours in philosophy and three hours in psychology. They are specially advised to take courses 3a and 4 in philosophy, and courses 1 and 5 in psychology. Graduate students who are taking their major work in education must have had as a prerequisite for such study, education 1, 2, and 3 and at least one elementary course in psychology and one in philosophy. No student who has not at least junior standing will be allowed to elect courses in education.

INTRODUCTORY COURSES

1. PRINCIPLES OF EDUCATION.—This forms the groundwork for subsequent courses. The various processes involved in education are traced back to the basic principles of biology, psychology, and sociology which explain and justify them. The illustrations are chosen as far as possible from actual classroom practice, and the course concludes with a brief discussion of the technique of teaching. Opportunities will be afforded for the observation of elementary and secondary teaching. *I*, (5). Professor BAGLEY.

Prerequisite: At least two years of university work.

2. HISTORY OF EDUCATION.—The development of educational theory and practice in their relation to the history of civilization. *II*; (5). Assistant Professor ANDERSON.

Prerequisite: At least two years of university work.

INTERMEDIATE COURSES

3. GENERAL METHOD.—The application of the principles of education, psychology, and logic to the art of teaching. *II*, (3).

Dr. NORTON.

Prerequisite: Education I.

4. PRINCIPLES OF SECONDARY EDUCATION.—High school organization and management. A discussion of the essential elements of a high school, together with a consideration of the conditions existing in Illinois. Especial attention is given to the educational values of the studies represented in the secondary curriculum, to the structure of the course of study, and to the technique of secondary teaching and management. *II*, (3).

Professor BAGLEY, Assistant Professor HOLLISTER, and special lecturers.

Prerequisite: Education I.

11a. OBSERVATION AND PRACTICE TEACHING.—This course involves (a) the systematic observation of classroom work in the Academy of the University and in neighboring high schools; (b) weekly conferences for the discussion of observations; (c) one lecture each week upon the technique of teaching; (d) the preparation by students of plans illustrating the various types of school exercises discussed in the lectures; (e) the reading and summarizing by each student of the standard text on the teaching of the subject

elected; and (f) a review of the subject-matter that the student proposes to teach. During the last five weeks of the semester, each student teaches, under the supervision of the Department of Education and the Academy instructors, a review-class of secondary grade. Application for enrollment in this course should be made the preceding semester as the number of students admitted is limited by the number of Academy classes in which review-work can be done effectively. *I or II, (3).* Professor BAGLEY, Dr. NORTON.

Prerequisite: Education 1 and satisfactory standing in the University department representing the subject that the student elects to teach. Education 3 is strongly recommended in addition, and the "Teachers' Course" offered by the department representing the subject elected should either precede or accompany the course.

IIB. OBSERVATION AND PRACTICE TEACHING.—A repetition of Course IIA for those who desire to continue the work over two semesters. *I or II; (3).* Professor BAGLEY, Dr. NORTON.

Prerequisite: As for Course IIA.

IIC. PRACTICE TEACHING.—The student teaches a class of secondary grade during the entire semester under the supervision of the Department of Education and the Academy instructors, ranking during this time as an assistant in the Academy. Only seniors who satisfy the Department and the Principal of the Academy of their fitness for this work may enroll. Application should be made the preceding semester. *I or II; (5).*

Professor BAGLEY, Dr. NORTON.

Prerequisite: Education 1, and either Education 3 or Education 6.

(Note: The courses in observation and practice teaching are under the general supervision of Professor Bagley. The Principal of the Academy and the Academy instructors cooperate with the Department of Education in the details of supervision.)

14. SCHOOL LAW.—A study of the development and present condition of school legislation in the United States. The school laws of Illinois are studied in especial detail. *I; (2).* Dr. NORTON.

Prerequisite: Education I.

15. SCHOOL HYGIENE.—The hygienic aspects of school architecture and equipment; the hygiene of posture, exercise, and fatigue, and of reading and writing; the bearing of hygienic principles

upon the course of study, the daily program, and other details of administration and teaching. *II*; (3).

Dr. NORTON.

Prerequisite: At least five hours in Education.

16. SOCIAL PHASES OF EDUCATION.—The school as a social factor and its relation to the home, the church, and the state; the relation of education to child labor, vocation, and crime; educational extension. *II* (3).

Dr. NORTON.

Prerequisite: At least five hours in Education.

COURSE FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4. CONTEMPORARY EDUCATIONAL CONDITIONS AND MOVEMENTS IN THE UNITED STATES.—The interpretation of present tendencies as exemplified in the school systems of typical cities and states and in recent educational experiments in administration discipline, methods, and subject matter. *I*; (2).

Dr. NORTON.

Prerequisite: Education 1 and 2.

5. COMPARATIVE STUDY OF THE SECONDARY SCHOOLS OF FRANCE, GERMANY, ENGLAND, AND THE UNITED STATES.—The different types of secondary schools in each country; conditions of their origin and development; their present status and relation to elementary schools and universities. *II*; (2).

Dr. NORTON.

Prerequisite: Education 1 and 2.

13. EDUCATIONAL CLASSICS.—A critical study of the sources of the history of education. The more important educational works of Plato, Aristotle, Quintilian, Montaigne, Milton, Locke, Rousseau, Pestalozzi, Herbart, Froebel, Spencer, and others are considered. *I*; (3.)

Assistant Professor ANDERSON.

Prerequisite: Education 2 and Philosophy 3a and 4.

17. HERBART AND FROEBEL.—The philosophy, psychology, and pedagogy of Herbart and Froebel are critically studied and compared with other pedagogical systems. *I*; (3).

Assistant Professor ANDERSON.

Prerequisite: Education 1 and 2.

18. PRINCIPLES OF ESTHETIC, MORAL, AND RELIGIOUS EDUCATION.—Values, ideals, and methods of each; their relation to each other, to intellectual training, and to the utilities of life; their effects on social and national life and on the general advancement of the fine

arts; selection of the material of instruction, and the development of individual taste and conscience; the public school, the Sunday school, and other instrumentalities. *I*; (3). Dr. NORTON.

Prerequisite: Education 2 and Psychology 7.

20a. THEORY OF SUPERVISION.—A study of the problems of supervision, with especial reference to the supervisor's functions in training and improving teachers. Open only to graduate students, to seniors who are either graduates of normal schools or experienced teachers, and to seniors who are preparing for the work of supervision in special subjects, such as household science, manual training, and physical training. *II*; (3). Professor BAGLEY.

Prerequisites: Education 1, 6.

20b. THEORY AND PRACTICE OF SCHOOL SUPERVISION.—Course 20a with the addition of a period of actual practice in the constructive criticism of teaching. *II*; (5). Professor BAGLEY.

Prerequisites: Education 1, 6.

COURSES FOR GRADUATES

101. SEMINARY IN EDUCATION.—Hours and credits to be arranged.

Professor BAGLEY, Assistant Professor ANDERSON, Dr. NORTON.

III. PRACTICE TEACHING.—This course is based upon Education 11c. Each graduate student taking this course must select, with the approval of the Department of Education, some problem of teaching upon which there is a division of opinion among educators, plans means for investigating this problem, and present a written report of his methods and results before the close of the term.

Professor BAGLEY, Dr. NORTON.

MATHEMATICAL AND PHYSICAL SCIENCES

ASTRONOMY

Students with no mathematical training may elect course 1. Course 4 is for beginners, but requires trigonometry. Other courses should be taken in the order of 3, 6, 15, 14, 7.

1. ELEMENTARY ASTRONOMY.—This is a course for beginners and does not require mathematics. From lectures and the text the student will be given a general view of the subject, and this class

room work will be supplemented by direct observation of the sky. Some simple work will be done with the instruments of the observatory, but emphasis will be laid on those observations which can be made without apparatus, and which the student can do in after life. *I* (3). Assistant Professor STEBBINS, Dr. REED.

4. GENERAL ASTRONOMY.—A beginners course, with more observational work than Astronomy 1. Two evenings per week are spent at the observatory. *II*; (5). Dr. REED.

Prerequisite: Mathematics 4.

6. PRACTICAL ASTRONOMY.—This course is offered especially for engineers. Rough and accurate determination of latitude, azimuth, and time are essential parts of the course; and emphasis is laid on the methods which the engineer will be able to use with the ordinary surveyor's transit. The necessary amount of spherical trigonometry is given at the beginning of the work. This course is also designed to train the student in the art of computing. *Comstock's Field Astronomy for Engineers. II*; (2).

Assistant Professor STEBBINS.

Prerequisite: Mathematics 7 or 8a.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

7. THEORETICAL ASTRONOMY.—This course begins with the elementary theory of the motions of the heavenly bodies, and is intended to lead the student up to the actual computation of a cometary orbit. *I, II*; (3). Dr. REED.

Prerequisite: Mathematics 8a, 8b, or 7, 9.

9. CELESTICAL MECHANICS.—A continuation of course 7. Introduction to the theory of disturbed planetary motion. *I, II*. Dr. REED.

Prerequisite: Mathematics 16; Astronomy 7.

14. OBSERVATIONAL ASTRONOMY.—This course is intended for those who wish to become familiar with the working methods of an astronomical observatory. The problems set for solution are largely individual. *II*; (3). Assistant Professor STEBBINS.

Prerequisite: Astronomy 15.

15. GEODETIC ASTRONOMY.—Advanced work with the sextant, transit, and zenith telescope. The methods taught are similar to those of the United States Coast Survey. *I*; (3).

Assistant Professor STEBBINS.

Prerequisite: Mathematics 7 or 8a.

MATHEMATICS

The courses offered by the department are arranged to meet the needs of three classes of students: (1) those who wish to elect the subjects as an element in a general education; (2) those who will have occasion to make use of mathematics in cognate subjects, and (3) those who wish to specialize in mathematics. Those who select mathematics as a major subject should take mathematics 2, 4, 6 in the freshman year; mathematics 8a, 8b, 10, the sophomore year, and mathematics 16, 17a, 18a, 19a, in the junior year. In the senior year such selection may be made from the courses open to graduates and undergraduates as seems desirable. Students specializing in mathematics are advised to take work also in some line of applied mathematics.

INTRODUCTORY COURSES FOR UNDERGRADUATES

II. COLLEGE ALGEBRA.—The work of this course assumes a knowledge of algebra through quadratics. Sections A to S are open to engineers. I; (3).

Professor MILLER, Associate Professor WILCZYNSKI, Assistant Professor RIETZ, Assistant Professor HASKINS, Assistant Professor YOUNG, Assistant Professor SISAM, Dr. CRATHORNE, Mr. PONZER, Dr. NEIKIRK, Dr. BÖRGER, Dr. REED, Dr. LYTLE, Dr. WAHLIN.

3a. SPHERICAL TRIGONOMETRY.—II; (2). Dr. REED.

Prerequisite: Solid and Spherical Geometry.

4. PLANE TRIGONOMETRY.—I; (2).

Professor MILLER, Associate Professor WILCZYNSKI, Assistant Professor RIETZ, Assistant Professor HASKINS, Assistant Professor YOUNG, Assistant Professor SISAM, Dr. CRATHORNE, Mr. PONZER, Dr. NEIKIRK, Dr. BÖRGER, Dr. LYTLE, Dr. WAHLIN.

5. TEACHERS' COURSE.—In this course special attention is given to a discussion of the methods of teaching algebra and geometry, the position of mathematics in the secondary school course, the correlation of mathematics with allied subjects, a comparative study of the leading text-books, and a brief history of elementary mathematics. II; (2). Dr. LYTLE.

6. ANALYTIC GEOMETRY.—An introductory course in plane and solid analytic geometry. Sections A to S are for engineers, sections T to V are for students of the College of Science and of the College of Literature and Arts. *II*; (5).

Professor MILLER, Associate Professor WILCZYNSKI, Assistant Professor RIETZ, Assistant Professor HASKINS, Assistant Professor YOUNG, Assistant Professor SISAM, Dr. CRATHORNE, Mr. PONZER, Dr. NEIKIRK, Dr. BÖRGER, Dr. LYTLE, Dr. WAHLIN.

Prerequisite: Mathematics 2, 4.

7, 9. DIFFERENTIAL AND INTEGRAL CALCULUS.—The principles of the differential and integral calculus are developed and applied to functions of one and of several variables, with special reference to the needs of engineering students. *I*; (5); *II*; (3).

Associate Professor WILCZYNSKI, Assistant Professor REITZ, Assistant Professor SISAM, Dr. CRATHORNE, Mr. PONZER, Dr. NEIKIRK, Dr. BÖRGER, Dr. LYTLE, Dr. WAHLIN.

Prerequisite: Mathematics 6.

8a, 8b. DIFFERENTIAL AND INTEGRAL CALCULUS.—The first semester of this course (8a) constitutes an introductory course in differential and integral calculus. The course in the second semester (8b) is a continuation of 8a, in which some of the topics considered in 8a are considered with more detail and new topics are introduced, so that the year's work approximately covers the same ground as courses 7, 9 above. *I*; (5). *II*; (2).

Professor MILLER, Assistant Professor YOUNG, Dr. LYTLE.
Prerequisite: Mathematics 6.

10. THEORY OF EQUATIONS AND DETERMINANTS.—A continuation of the theory of equations given in college algebra (Mathematics 2.) It is based on Burnside and Panton's Theory of Equations. *II*; (3). Professor MILLER.

Prerequisite: Mathematics 7 or 8a.

9a. DIFFERENTIAL AND INTEGRAL CALCULUS. (Second Course).—This course is for third year students, and is designed to give a more detailed discussion of certain important topics than is possible in the first course (mathematics 7 and 9). The following subjects are treated. The definite (single and multiple) integral with exercises in the formulation of problems arising in applied mathematics; line, surface, and volume integrals; the theorems of

Stokes and Green; partial differentiation; exact differentials with applications of the conditions for exactness; elements of differential equations, approximate quadrature and integration of differential equations. *I*, (2). Assistant Professor HASKINS.

Prerequisite: Mathematics 7 and 9.

COURSES FOR GRADUATES AND ADVANCED UNDERGRADUATES

16. DIFFERENTIAL EQUATIONS.—This course embraces the following topics: General linear equations with constant coefficients, special forms of differential equations of higher order, integration in series, etc. *I*; (3). Professor SHATTUCK.

Prerequisite: Mathematics 8a, or 9.

17a. ADVANCED CALCULUS.—This course begins with the consideration of the fundamental notions and theorems of the calculus from a more advanced and critical point of view. This is followed by the study of certain more advanced topics in the integral calculus, including elliptic integrals and functions defined by definite integrals. *II*; (3). Assistant Professor HASKINS.

Prerequisite: Mathematics 8a, 8b (or 7, 9.)

18a. CONSTRUCTIVE GEOMETRY.—The purpose of this course is primarily the development and training of the student's power of space perception. To this end the properties of lines, planes, and the simpler surfaces of the second order are studied by various methods of parallel and central projection. Special stress is laid on the graphical interpretation of the processes of analytic geometry and the analytic discussion of the methods of descriptive geometry. *I*; (2). Assistant Professor SISAM.

Prerequisite: Mathematics 6.

19a. SOLID ANALYTIC GEOMETRY.—A general review of the equations of the plane and the right line in space and the more general properties of surfaces of the second degree. The classification and special properties of quadrics, and a brief introduction to the theory of surfaces in general. *II*; (3). Dr. CRATHORNE.

Prerequisite: Mathematics 8a (or 7), 10.

20. CALCULUS OF VARIATIONS.—This course has for its aim merely to acquaint the student with those elements of the science that are most needed in the study of the higher subjects of mathematical astronomy and physics. *II*; (3).

Professor SHATTUCK.

Prerequisite: Mathematics 16.

21a. METHOD OF LEAST SQUARES.—The fundamental principles of the subject. The following subjects are studied: Law of probability and error, adjustment of observations, precision of observations, independent and conditional observations, etc. *I; (2).*

Assistant Professor STEBBINS.

Prerequisite: Mathematics 8a, or 7.

22a. PARTIAL DIFFERENTIAL EQUATIONS.—This course deals with the integration and determination of the integration constants of such partial differential equations as arise in the study of such subjects as the flow of heat, the vibration of strings, plates, etc., and electricity. *II; (2).* Professor TOWNSEND, Dr. CRATHORNE.

Prerequisite: Mathematics 8a or 9, 16.

23a. AVERAGES AND THE MATHEMATICS OF INVESTMENT.—The meaning, use, and abuse of different kinds of averages. The relation of the theory of probability to averages, and the application of the elements of probability to annuities, insurance, and various branches of science. Such information relating to loans and investments as can best be put into algebraic language, and are of interest to the general student. Many practical problems are given in the evaluation of investment securities. *II; (3).*

Assistant Professor RIETZ.

Prerequisite: Mathematics 2 and junior standing.

24a. FUNCTIONS OF A COMPLEX VARIABLE.—A general introduction to the theory of functions of a complex variable. *I, II; (3).*

Professor TOWNSEND.

Prerequisite: Mathematics 8a, 8b, (or 7, 9), 10.

27. PROJECTIVE GEOMETRY AND LINEAR TRANSFORMATIONS.—Sets of postulates for general projective geometry and the introduction of analytic methods on the basis of these assumptions. Projective transformations in the line, plane, and space. Introduction to the algebra of matrices and the theory of invariants. Subgroups of the general projective group. Euclidean, non-euclidean, and affine geometries. Theory of conics and quadric surfaces. Real and complex geometries. Throughout the emphasis is on geometric and algebraic inter-relations. *I, II; (3).*

Assistant Professor YOUNG, Dr. BORGER.

Prerequisite: Senior standing in Mathematics.

30. SEMINARY AND THESIS.—*I, II; (3).*

Professor TOWNSEND, Professor MILLER, Associate Professor WILCZYNSKI, Assistant Professor RIETZ, Assistant Professor HASKINS, Assistant Professor YOUNG, Assistant Professor SISAM.

31. ACTUAL THEORY.—A detailed study of the application of probability to life contingencies, the construction and graduation of mortality tables, the elements of fire insurance, and the calculation of premiums for various types of life and fire insurance. *I; (3).*

Assistant Professor RIETZ.

Prerequisite: Mathematics 8a, and 29.

(Not given 1909-10).

COURSES FOR GRADUATES

101. FUNCTIONS OF REAL VARIABLES.—An introduction to the theory of functions of real variables, making use of the general principles of the theory of assemblages. *I, II; (3).*

Professor TOWNSEND.

Prerequisite: Mathematics 8a, 8b, (or 7, 9), 10.

(Not given 1909-10; to be given 1911-12).

102. FOURIER'S SERIES.—This course is intended for students both of pure mathematics and of the physical sciences. It consists of a brief consideration of the elementary theory of Fourier's and allied series, followed by detailed discussion of numerous physical applications and consideration of classical and recent researches concerning the properties of Fourier's series and operations upon them. *I, II; (3).*

Assistant Professor HASKINS.

Prerequisite: Mathematics 16.

103. THEORY OF POTENTIAL.—The elements of the theory of the logarithmic and Newtonian potential functions. Green's theorems and functions. Boundary value problems. Applications to physical problems. *II; (3).*

Assistant Professor HASKINS

Prerequisite: Mathematics 16.

(Not given 1909-10.)

104. EXPANSIONS IN TERMS OF OSCILLATORY FUNCTIONS.—*I; (3).*

Assistant Professor HASKINS.

Prerequisite: Mathematics 16.

(Not given 1909-10; to be given 1910-11.)

110. ELLIPTIC FUNCTIONS.—The elements of the theory of elliptic functions with applications to geometry and mechanics. Introduction to the theory of the elliptic modular functions. *I, II; (3).* Professor TOWNSEND.

Prerequisite: Mathematics 24a.

(Not given 1909-10; to be given 1910-11.)

111. AUTOMORPHIC FUNCTIONS.—An introduction to the theory of automorphic functions. The first semester will be devoted mostly to the group-theoretic side of the theory; the second semester will be concerned with the function-theoretic developments and applications. *I, II; (3).* Assistant Professor YOUNG.

Prerequisite: Mathematics 24a and preferably 27.

(To be given 1909-10).

112. ABELIAN FUNCTIONS.—Discussion of the algebraic functions of a complex variable and their integrals, Riemann's surfaces, birational transformations, Abel's theorem with geometrical applications, the inversion problem and the theta functions. *I, II; (3).*

Associate Professor WILCZYNSKI.

Prerequisite: Mathematics 24a, 110.

(Not given 1909-10; to be given 1911-12).

113. THEORY OF LINEAR DIFFERENTIAL EQUATIONS.—*II; (3).*

Assistant Professor YOUNG.

Prerequisite: Mathematics 16, 24a.

(Not given 1909-10; to be given 1911-12).

114. REAL SOLUTIONS OF LINEAR DIFFERENTIAL EQUATIONS.—*II; (3).* Assistant Professor HASKINS.

Prerequisite: Mathematics 16.

(Not to be given 1109-10; to be given 1910-11.)

115. INTEGRAL EQUATIONS.—*I, II; (3).*

Assistant Professor HASKINS.

Prerequisite: Mathematics 16.

(Not given 1909-10; to be given 1911-12).

120. ELEMENTARY THEORY OF GROUPS.—The study of the groups which present themselves in arithmetic, geometry, and trigonometry is followed by a determination and study of those which can be represented with a small number of letters. The latter part

of the course is devoted to the abstract group theory and the Galois theory of equations. *I, II; (3).* Professor MILLER.

(Not to be given 1909-10; to be given 1910-11).

121. THEORY OF GROUPS.—Second course. This course presupposes about one year's work in group-theory. It will be devoted to special topics depending upon the needs of the class. The early part of the course will be devoted to the consideration of recent advances and methods along these special lines, and it is hoped that the latter part may be used for research. *I, II; (3).*

Professor MILLER.

Prerequisite: Mathematics 120.

(To be given 1909-10.)

124. THEORY OF NUMBERS.—The principal subjects considered in this course are: congruences, Kronecker's modular systems, quadratic residues, quadratic forms, and algebraic numbers. *I, II; (3).*

Professor MILLER.

(Not given 1909-10; to be given 1911-12).

129. THEORY OF STATISTICS.—The general methods of statistical investigation, the application of the theory of probability to statistical data, the fitting of curves to observation, interpolation, theory of errors, and the mathematical theory of variability and correlation, the application of the principles developed to problems in economics and biology. *I, II; (3).* Assistant Professor RIETZ.

Prerequisite: Mathematics 80.

(To be given 1909-10).

130. INVARIANTS AND HIGHER PLANE CURVES.—This course includes the general theory of algebraic curves, together with the application of the theory of invariants to higher plane curves. Special study is made of curves of the third and fourth order. *I, II; (3).*

Assistant Professor SISAM.

Prerequisite: Mathematics 8a, 8b, 10, 27.

(To be given 1909-10).

131. ALGEBRAIC SURFACES.—In this course are considered the application of homogeneous coordinates and the theory of invariants to geometry of three dimensions, and also the general theory of surfaces of the third and fourth order. *I, II; (3).*

Assistant Professor SISAM.

Prerequisite: Mathematics 19a, 130.

(Not given 1909-10; to be given 1910-11).

135. METRIC DIFFERENTIAL GEOMETRY.—Applications of the calculus to the general theory of curves and surfaces based primarily on the use of Cartesian coordinates. Relation of the theory of surfaces to the theory of invariants of a pair of quadratic differential forms. *I, II; (3)*. Associate Professor WILCZYNSKI.

Prerequisite: Mathematics 16.

(Not given 1909-10; to be given 1910-11).

136. PROJECTIVE DIFFERENTIAL GEOMETRY.—This course includes a brief account of Lie's theory with applications to the theory of invariants of systems of linear differential equations. The differential properties of plane and space curves, and of surfaces are considered from a projective point of view. This more general projective standpoint distinguishes the course from the usual treatment of differential geometry, which is metric. *I, II; (3)*.

Associate Professor WILCZYNSKI.

Prerequisite: Mathematics 16, 27.

(To be given 1909-10).

140. THE FUNDAMENTAL CONCEPTS OF MATHEMATICS.—A course dealing with general concepts of higher mathematics in their bearing on elementary mathematics. *I. (3)*. Assistant Professor YOUNG.

Prerequisite: Senior standing in Mathematics.

(Not given 1909-10; to be given 1911-12).

141. VECTOR ANALYSIS.—A systematic exposition of the subject based upon the notations of Gibbs, followed by a comparative study of the various systems which have been proposed. *I, II; (3)*.

Associate Professor WILCZYNSKI.

Prerequisite: Mathematics 8b.

(Not given in 1909-10).

PHYSICS

INTRODUCTORY COURSES FOR UNDERGRADUATES

1. GENERAL PHYSICS.—Lectures with class room demonstrations, recitations, and written exercises. This course is taken regularly by sophomores in engineering, mathematics, physics, and chemistry. The laboratory course, Physics 3, is to be taken at the same time. *Two lectures and one quiz weekly. I; (3), II; (2)*.

Professor CARMAN, Assistant Professors WATSON, and SCHULTZ, Mr. STIFLER, Mr. KEMP, Mr. HORNBECK, Mr. —

Prerequisite: Mathematics 3 or 4.

3. PHYSICAL MEASUREMENTS.—Laboratory experiments running parallel with Physics 1; *two two-hour periods each week*; during the first six weeks there will be quizzes in connection with Physics 1. *I, II; (2).*

Assistant Professor SCHULTZ, Mr. STEMPER, Mr. KEMP, Mr. HORNBECK, Mr. —.

Prerequisite: See Physics 1.

2a. GENERAL PHYSICS.—Lectures with class room demonstrations, and recitations. This course is recommended for students in courses in arts and science. The laboratory course, Physics 2b, is to be taken at the same time. *Two lectures and one quiz weekly. I, II; (2).*

Assistant Professor WATSON, Dr. TAYLOR.

Prerequisite: Mathematics 3 or 4 (or may be taken at same time.)

2b. INTRODUCTORY LABORATORY PHYSICS.—A course of physical measurements to supplement Physics 2a. *Two two-hour laboratory periods a week. I, II; (2).*

Assistant Professor WATSON, Dr. TAYLOR.

Prerequisite: See Physics 2a.

INTERMEDIATE COURSES

These courses are second-year physics courses, following Physics 1 and 3, or 2a and 2b.

14. PROPERTIES OF MATTER.—Text-books, *Poynting and Thompson's Properties of Matter; Stewart and Gee's Practical Physics, Vol. I.* Two afternoons in the laboratory, with recitation, assigned reading, and reports. *I, II; (2).*

Professor CARMAN.

Prerequisite: Physics 1 and 3, or 2a and 2b.

15. ELECTRICITY AND MAGNETISM.—A laboratory course with lectures, assigned reading, and reports. *I, II; (2).*

Assistant Professor KNIPP.

Prerequisite: Physics 1 and 3, or 2a and 2b.

16. HEAT.—Lectures and recitations on fundamental heat phenomena, and elements of the mechanical theory of heat. Laboratory experiments in thermometry, calorimetry, vapor pressures, expansion, and conduction in radiation of heat, mechanical equivalent of heat, etc. *III; (2).*

Assistant Professor WATSON.

Prerequisite: Physics 1 and 3, or 2a and 2b.

17. LIGHT.—Recitations and laboratory exercises. *Edser's Light* is used as a text-book. *II; (2).*

Professor CARMAN.

Prerequisite: Physics 1 and 3, or 2a and 2b.

18. **TEACHERS' COURSE.**—Practical work for students preparing to teach physics. The course includes (a) discussion of classroom text-books, laboratory manuals, apparatus ordering, and methods of conducting work in physics; (b) the working out in detail of a laboratory course suitable for a high school. The student will perform some of the experiments to be given in this proposed course, and will also do manipulative work with glass and apparatus when necessary. *I; (2).* Assistant Professor WATSON.

Prerequisite: Physics 1 and 3, or 2a and 2b.

COURSES FOR UNDERGRADUATES AND GRADUATES

4. **ELECTRICAL AND MAGNETIC MEASUREMENTS.**—Laboratory exercises with discussions and recitations. The course extends throughout the year. It is taken by junior students in electrical engineering and is recommended to others wishing an exact course in electrical and magnetic measurements. *Two three-hour periods weekly. I, II; (2).*

Assistant Professor KNIPP, Mr. STIFLER, Mr. STEPHENSON.

Prerequisite: Physics 1 and 3, or 2a and 2b; Mathematics 7 and 9.

25. **HEAT.**—Lectures and recitations based on *Le Chatelier's High Temperature Measurements*. Laboratory work will be given involving measurements of temperatures with thermo-couples, resistance thermometer and various types of optical pyrometers. Melting and boiling points will also be determined. Problems involving the investigation of properties of bodies over a range of temperature from that of liquid air to the electric arc will be taken up so far as time allows, but such problems will more properly come under course 31. *II; (2).*

Professor CARMAN.

Prerequisite: Physics 1 and 3, or 2a and 2b; Physics 16 advised.

30a. **INTRODUCTION TO THEORETICAL ELECTRICITY.**—A course of lectures and recitations discussing the phenomena with elementary calculus methods, and with occasional lecture-room demonstrations. *Two periods weekly for the year. I, II; (2).*

Assistant Professor KNIPP.

Prerequisite: Physics 1 and 3, or 2a and 2b.

30b. **ELECTRICITY AND MAGNETISM.**—A course of electrical measurements, including experimental work in some of the more

recent developments, such as electric waves and their application to wireless telegraphy, electrical discharge in gases, etc. *I* or *II*; (2, 3, or 5.)

Assistant Professor KNIPP.

Prerequisite: Physics 4, 30a desired.

CHEMISTRY

Students in chemistry are advised to give, at least one year to the subject, including Chemistry 1 or 1a, 2, and 3. Those continuing in the second year should take Chemistry 5a and 5b, 5c or 13a. In the third year there should be taken Chemistry 14 or 9 9a, 9b, 31 and 33a. Along with these, more special courses may be taken if desired, but in general, students are not advised to take the special courses unless they have had the fundamental work represented by the selection given above. Students who desire a training for professional work in chemistry, either as teachers or in its industrial application work in chemistry, either as teachers or in its industrial applications, will naturally take the chemical course or the course in chemical engineering.

Students who find it impossible to take more than one semester's work are requested to register for Chemistry 1 or 1a in the second semester rather than the first.

1. INORGANIC CHEMISTRY.—This course deals with the general principles of the science. *Alexander Smith's General Inorganic Chemistry*.. *I*, or *II*; (5).

Professor NOYES, Dr. BALKE, Dr. SMITH, Dr. ISHAM, Dr. MCCARTHY.

1a. INORGANIC CHEMISTRY.—A course in inorganic chemistry for students who have had one year of high school chemistry. The course includes class and laboratory work. *I*, or *II*; (4).

Professor NOYES, Dr. BALKE, Dr. SMITH, Dr. ISHAM.

2. INORGANIC CHEMISTRY.—This course is a continuation of Chemistry 1 and is mainly devoted to a study of the metallic elements, their classification, compounds, and chemical properties. The work is from lectures and assigned text. It must be accompanied by Chemistry 3. *Alexander Smith's General Inorganic Chemistry*. *II*; (2). Professor NOYES, Dr. BALKE,, Dr. ISHAM, Dr. MCCARTHY.

Prerequisite: Chemistry 1.

3. QUALITATIVE ANALYSIS.—This course consists of recitations

and laboratory practice in the ordinary processes of qualitative analysis. It must be accompanied by Chemistry 2. *I* or *II*; (3).

Dr. SMITH, Dr. McCARTHY.

Prerequisite: Chemistry 1.

5a. ELEMENTARY QUANTITATIVE ANALYSIS.—The laboratory work comprises a series of experiments which illustrate the fundamental principles of gravimetric and volumetric methods. The lectures and recitations consist of a consideration of stoichiometrical relations, the fundamental laws of chemistry and their application to the study of solutions. Medical preparatory students are given special problems in the latter part of the course. *I*; (5).

Dr. HOLMES, Dr. BURGESS.

Prerequisite: Chemistry 2, 3.

5b. QUANTITATIVE ANALYSIS.—Continuation of 5a. A comparative study of methods with practice in the analysis of silicates, metallic compounds and alloys. Some work in advanced qualitative analysis will be given to students in the courses in chemistry and chemical engineering. *II*; *Lectures; Laboratory*; (5).

Dr. HOLMES, Dr. BURGESS.

Prerequisite: Chemistry 5a.

5c. FOOD ANALYSIS.—This course includes the analysis of food stuffs, grain, milled products, alcoholic beverages, baking powders, vinegars, syrups, sugars, etc. Students who have taken work amounting to five hours' credit in this course may arrange to do more advanced work along the following lines; (a) the study of methods for detecting food adulterations; (b) the separation and determination of the nitrogenous constituents of animal and vegetable foods; (c) the identification and estimation of the carbohydrate constituents of food products. *II*; (3-5).

Dr. HOLMES.

Prerequisite: Chemistry 5a or 13a, and 9 or 14.

6. CHEMICAL TECHNOLOGY.—This is a course of lectures comprising a study of technological chemistry as illustrated in those industries having a chemical basis for their principal operations and processes. Much use is made of the journals. *Thorpe's Industrial Chemistry* is used as a guide. No laboratory work. *II*; (2). Professor PARR.

Prerequisite: Chemistry 5a.

7. METALLURGY.—A general course in metallurgical processes. Lectures and assigned reading. *I*; (2). Professor PARR.

Prerequisite: Chemistry 5a.

8. IRON AND STEEL ANALYSIS.—Analyses are made of all the constituents by both rapid or technical, and standard methods. II; (3).
Dr. HOLMES.

Prerequisite: Chemistry 5b.

9. ORGANIC CHEMISTRY.—For students of the medical preparatory course and others desiring a short course in this subject. The work consists in the discussion of the characteristics of the more typical and simple organic compounds, followed by a brief consideration of most of the important classes of derivatives of carbon. *Remsen's Organic Chemistry*. Must be accompanied by 9c. II; (3).

Assistant Professor CURTISS.

Prerequisite: Chemistry 2 and 3.

9a. ORGANIC SYNTHESIS.—Laboratory work for students of the chemical course, in ultimate organic analysis and the preparation and study of typical organic compounds, to accompany Chemistry 14. I; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 3 and 3.

9b. ORGANIC SYNTHESIS AND ANALYSIS.—Continuation of 9a, to accompany Chemistry 14. II; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 9a.

9c. ORGANIC SYNTHESIS.—Laboratory work in organic chemistry for students of the medical preparatory course. Typical organic compounds are prepared and studied. Especial attention is directed to the organic substances of medicinal value and those of physiological importance. II; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 2 and 3.

10a. SANITARY ANALYSIS.—Lectures on history, sources, contamination, and the standards of purity of potable waters and waters for industrial purposes, together with practice in analytical methods. I; (2).

Professor BARTOW.

11. RESEARCH.—In the senior year a special line of work is arranged for each individual, designed particularly to develop self-reliance and initiative in dealing with new problems or topics needing comparative study or review. A thesis must be prepared embodying a thorough review of the literature of the subjects, together with an account of the work done in the laboratory. As far as possible the subject must be determined upon and reading begun

in the junior year. A minimum of five semester hours is required. *I, II; (5).*

Professors NOYES, PARR, BARTOW, HAWK, Assistant Professor CURTISS, Dr. HOLMES, Dr. BALKE, Dr. WASHBURN, Dr. SMITH,

Dr. ISHAM, Dr. JONES, Dr. JESSE, Dr. BURGESS, Dr. MCCARTHY.

14. ORGANIC CHEMISTRY.—This course consists of lectures and recitations upon the fundamental principles and more important compounds of organic chemistry. *Noyes's Organic Chemistry.* This course must be accompanied by Chemistry 9a and 9b. *I, II; (3).* Professor NOYES.

Prerequisite: Chemistry 5a.

15. PHYSIOLOGICAL CHEMISTRY.—This course is designed especially for students desiring a fundamental knowledge of the principles of physiological chemistry. It will consist of lectures, demonstrations, conferences and practical work. The course will include a systematic study of enzymes; carbohydrates; salivary digestion; gastric digestion; fats; pancreatic digestion, intestinal digestion; bile; putrefaction products; feces; blood; milk; epithelial and connective tissue; muscular tissue; nervous tissue and urine. The work on gastric juice, blood, urine, and milk will be both qualitative and quantitative, and all the clinical aspects of these topics will be treated thoroughly for the benefit of prospective students of medicine. The course is open to graduates and undergraduates. *I; (5).* Professor HAWK.

Prerequisite: Two years' work in chemistry.

18. SPECIAL COURSES.—Special courses as indicated below, consisting mainly of laboratory work, may be arranged for those competent to pursue them. From 1 to 10 hours' credit will be allowed in the undergraduate courses for such work.

(a) Special problems in assaying and ore treatment. Free-milling chlorination and cyanide tests. Professor PARR

(b) Advanced metallurgical chemistry. Professor PARR.

(c) Analysis and calorimetry of fuels. Professor PARR.

(d) Paints, oils, etc. Protective coverings for wood and iron. Professor PARR.

(e) Analysis of commercial fertilizers. Dr. HOLMES.

(f) Special methods of gas analysis. Professor PARR.

21. PROXIMATE ORGANIC ANALYSIS.—A course of laboratory practice, for advanced students, in systematic methods for the iden-

tification or organic compounds and a study of organic mixtures as found in commercial articles. *I*; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 9b or 9c.

22. ANIMAL CHEMISTRY.—A course for the detailed study of the chemical compound of animal products and feeding stuffs. This is a combined classroom and laboratory course. *I*, or *II*; (3-5).

Professor GRINDLEY.

Prerequisite: Two years' work in chemistry.

24. TOXICOLOGY.—Mainly laboratory work upon the detection and estimation of the more common poisons, organic and inorganic. *II*; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 5a and 9.

27. QUALITATIVE ANALYSIS OF THE RARE ELEMENTS.—A detailed study of the rare elements and their compounds. The work consists mainly in the identification and separation of the elements and the study of the formation, solubilities, and chemical reactions of their salts. Reading is assigned in connection with laboratory work. *II*; (3).

Dr. BALKE.

Prerequisite: Two years' work in Chemistry.

31. ELEMENTARY PHYSICAL CHEMISTRY.—This course is designed to present, in an elementary manner, some of the more important principles and methods of physical chemistry and electrochemistry. Instruction is by lectures and recitations. To secure familiarity in applying the laws and principles of physical chemistry to practical problems in other branches of chemistry, the student is expected to solve numerous problems in connection with this course. *Walker's Introduction to Physical Chemistry*. *II*; (3).

Dr. WASHBURN.

Prerequisite: Chemistry 1, 2, and 3; Physics 1 or 2a.

33a. ELEMENTARY PHYSICAL CHEMISTRY.—A laboratory course to accompany course 31. The experiments performed will include, the methods of determining molecular weight both in the gaseous state and in solution; the application of the principles relating to chemical equilibrium; the measurement of the electrical conductivity of solutions and the application of this property interpreting the phenomena occurring within the solution; and the illustration of some of the fundamental conceptions of thermochemistry. *II*; (2).

Dr. WASHBURN, Dr. JONES.

Prerequisite: Chemistry 5a, Physics 2b or 3.

61. INORGANIC PREPARATIONS.—A laboratory course in the preparation of chemical products from raw materials. The manufacture and testing of pure chemicals, fractionation, and other processes of the manufacturing chemist. *II*; (2) Professor PARR, Dr. JESSE.

65. TECHNICAL GAS AND FUEL ANALYSIS.—Examination of gases, gas mixtures, flue gases, and fuels. Determination of calorific values and calculation of efficiencies. *I*; (2).

Professor PARR, Dr. JESSE.

Prerequisite: Chemistry 5b.

66. EXACT GAS ANALYSIS.—A laboratory and lecture course on the analysis of commonly occurring gaseous mixtures, involving the use of the Hempel apparatus, measurement of gases under constant pressure and constant volume, and determination of the density of gases. *II*; (2).

DR. ISHAM

Prerequisite: Chemistry 5b.

69. ASSAYING.—The fire assay of lead, gold, and silver ores. Fluxes, reagents, and charges are studied in connection with various typical ores, and practice given in use of the crucible and muffle furnaces and in the manipulations connected with fire assaying. *I*; (2).

Professor PARR, Dr. MEARS.

Prerequisite: Chemistry 5a. Mineralogy.

93. JOURNAL MEETING.—For juniors, seniors, and graduates. *I, II*; (1). All members of the teaching staff in the Chemical Department.

GEOLOGY

To students who are especially interested in geology the department offers three lines of work, and recommends that the courses be usually taken in the order indicated below:

MINEROLOGY, PETROGRAPHY, ECONOMIC GEOLOGY.—For those who care particularly for minerals and rocks, their identification, origin, and transformations; the origin, characteristics, and classification of ores and the economic qualities of non-metallic minerals, it is recommended that the following courses be taken in the order given: Geology 19, 1, 1a, 5, 6, 7, 17, 15, 2.

STRATIGRAPHY, PALEONTOLOGY.—If the student cares more for the history of rocks, the order in which they were laid down, the conditions which gave them their peculiarities, and the evolution of living forms as shown by the succession of fossils, the following

courses are recommended in order: Geology 19, 1, 1a, 9, 16, 5, 18, 20, 15, 4.

PHYSIOGRAPHIC GEOLOGY, PHYSICAL GEOGRAPHY.—If interest lies more in the earth's surface, the origin of its topographic forms, the agencies which are transforming them, and the influence of these upon the welfare of plants, animals, and man, the courses below are advised, in order:

Geology 19, 14, 10, 5, 1a, 11, 8, 20, 17, 4. These courses will be of special interest to prospective teachers of physiography.

The attention of students who can devote but a single semester to the subject is directed to the following courses: For engineers, Geology 3, 5, 13. For Agriculturists, Geology 12, 8, 14. For students in commerce, Geology 14, 8. For students in literature and science, Geology 3, 1, 10, 14, 8.

COURSES FOR UNDERGRADUATES

1. **GENERAL GEOLOGY.**—A study of the agents and processes involved in the development of the earth's present features. Lectures and laboratory work. *I*; (5). Assistant Professor SAVAGE.

Prerequisite: Chemistry 1 or an equivalent.

1a. **HISTORICAL GEOLOGY.**—A continuation of Course 1. A study of the evolution of the earth and its life. Lectures and laboratory work. The laboratory work will consist largely of a study of a few of the more characteristic fossils from the various horizons. This forms an introduction to Courses 9 and 16. *II*; (5).

Assistant Professor SAVAGE.

Prerequisite: Geology 1, 3 or 10.

2. **ECONOMIC GEOLOGY.**—A study of the origin and manner of occurrence of minerals and rocks of economic importance, with special reference to those found in North America. Lectures and laboratory work. *II*; (5). Associate Professor BAYLEY.

Prerequisite: Geology 5 and 1, and 1a or 3.

3. **ELEMENTS OF GEOLOGY.**—A synoptical course treating of the leading facts and principles of mineralogy, and dynamic, historic, and economic geology. It should be taken by those who do not expect to devote more than one semester to the subject. One hour each day is devoted to laboratory work and the time is about equally divided between the study of minerals, rocks, contour maps, etc., and fossils. *I*; (5). Professor ROLFE, Dr. BAGG.

4. **THESIS COURSE.**—Students taking this course are assigned certain field or laboratory problems upon which they are expected to make a complete report under the direction of some one of the instructors in the department, with maps, sections, and figures based on their own observations. *II*; (5).

5. **MINERALOGY.**—The first course in mineralogy is intended as an introduction to succeeding work in petrography and economic geology, and in addition to furnish a general working knowledge of the most common ores and minerals of scientific importance. The course consists of lectures and laboratory exercises upon the elements of crystallography and upon such characteristics of about 125 of the most important minerals as will enable the student to become thoroughly familiar with them. The laboratory work includes a short course in blowpipe analysis. *I*; (5).

Associate Professor BAYLEY.

Prerequisite: Chemistry 1, 2, 3.

6. **PHYSICAL AND OPTICAL MINERALOGY.**—A direct introduction to the course in petrography. The physical and optical properties of minerals are discussed in lectures and studied in laboratory with special reference to their relations with respect to symmetry. The larger portion of the work is devoted to the study of polarized light and its practical use in identifying the rock-forming materials. *II*; (3).

Associate Professor BAYLEY.

Prerequisite: Geology 5.

7. **PETROGRAPHY.**—The principles learned in Course 6 are applied to the study of rocks. Lectures describe the different types of these rocks and discuss their origin and classification. In the laboratory a representative suite of specimens is studied in the hand specimen and thin section. *I*; (3). Associate Professor BAYLEY.

Prerequisite: Geology 6.

8. **PHYSICAL GEOGRAPHY.**—Physiography of Europe with selected regions in the Americas, Asia, Africa, etc. This course will be useful to students in the courses in commerce, as it explains the physical conditions which control the production of the principal commodities used by man. It also supplements course 11. *II*; (3).

Professor ROLFE, Mr. HUTTON.

Prerequisite: Geology 14.

9. **PALEONTOLOGY.**—A study of paleozoic invertebrate fossils, their classification and relationships. Instruction will be given in

the identification of the fossils, and in the finding and use of the literature of the subjects. Lectures and laboratory. *I*; (5).

Assistant Professor SAVAGE.

Prerequisite: Geology 1a. Recommended: 1 year of botany or zoology.

10. **PHYSIOGRAPHIC GEOLOGY.**—A course in General Geology in which special stress is laid on the origin, modification and destruction of geographic forms, and on the relation of these forms to underlying geologic structure. This course together with Meteorology (No. 14) will be of special interest to those who expect to teach physical geography. *II*; (5).

Professor ROLFE, Mr. HUTTON.

11. **PHYSIOGRAPHY OF THE UNITED STATES.**—A study of the topography, climatology and economic geography of the United States and contiguous portions of Canada and Mexico. *I*; (5).

Professor ROLFE, Mr. HUTTON.

Prerequisite: Geology 14 and 1 or 3 or 10.

12. **GEOLOGY OF SOILS.**—A discussion of those portions of Geology which help to explain the origin of the various classes of soils, the mineral composition and physical characteristics of each class, and the transformations which they undergo. *II*; (5).

Professor ROLFE, Dr. BAGG.

Prerequisite: Chemistry 1 or an equivalent.

14. **METEOROLOGY.**—An elementary course in meteorology, oceanography and climatology. This course deals with the general circulation of the atmosphere; ocean currents; the laws of storms; and the influence of these on the distribution of rainfall and the climatic conditions which control the geographic distribution of plants and animals. *I*; (3).

Professor ROLFE, Mr. HUTTON.

This course is prerequisite for Geology 8. Courses 14 and 8 should be taken with Economics 26 by students of commerce.

15. **STRUCTURAL GEOLOGY.**—An account of the arrangement of the rocks which form the earth's crust, and their consequent distribution on its surface. A study of mountains, faults, folds, and other diastrophic phenomena. *I*; (5). Associate Professor BAYLEY.

Prerequisite: Geology 1a.

16. **STRATIGRAPHY.**—This course follows Course 9, and is a study of the methods and criteria employed in the correlation of strata, of the characteristic invertebrate faunas of the successive

geologic formation, and their distribution, and of the application of these studies to the problems of stratigraphy. Lectures and laboratory. *II*; (5). Assistant Professor SAVAGE.

Prerequisite: Geology 9.

17. CONTINENTAL EVOLUTION.—A study of the development of continents based on the distribution of the strata of the successive geological systems, and the character and variations of the sediments with their faunas in each period. Also conclusions based upon them as to the distribution of lands and seas, and their relative altitudes in geologic ages. *I*; (5). Dr. BAGG.

Prerequisite: Geology 1a or 11.

18. MESOZOIC AND TERTIARY PALEONTOLOGY.—A study of the classification and development of the mesozoic and tertiary invertebrate fossil forms with some consideration of the evolution of vertebrates during the same periods. *II*; (5). Dr. BAGG.

Prerequisite: Geology 1a and Geology 9 or 10 credits in botany or zoology.

This course will be especially helpful to those who specialize in botany or zoology.

19. FIELD GEOLOGY.—INTRODUCTORY COURSE.—In 1909 a field trip of two weeks will be taken as a course introductory to the regular courses in general geology and physiography. Stops will be made at Waldron and Richmond, Indiana, Louisville and the Falls of the Ohio, Kentucky; and at the Wyandotte or Mammoth Cave. The localities visited will illustrate the marked difference between the physiographic features of youthful and mature topography, and of glaciated and non-glaciated areas. At the selected localities are classic exposures of richly fossiliferous Ordovician, Silurian, and Devonian strata. Fossils will be collected from the different horizons, and their use in determining the age of rocks will be explained. The party will be under the charge of Professor Savage, assisted by Mr. Mutton. *I*; (2).

Assistant Professor SAVAGE, Mr. HUTTON.

NOTE: The party will leave Urbana on Tuesday morning, August 31, 1909. Expenses will be kept down to the minimum and it is thought that they will not exceed \$40.00.

Enrollment for the trip will be made at the Geological lecture room at 2 p. m. on August 30. A credit of two hours will be allowed for this course on the presentation of a satisfactory report on the physiography or the general geology of the localities visited,

based on notes and collections obtained in the field. The student will be expected to enroll in one of the courses in geology or physiography the next semester. Those who think of taking the trip will please see Professor Savage or Mr. Hutton as soon as possible.

20. FIELD GEOLOGY.—A short field course in Geology will be given during the summer of 1910 (June 16 to 30). This will involve training in the field determination of physical features and rock formations, with mapping and description, of a small area in Carroll County, Illinois. *II*; (2). Assistant Professor SAVAGE

BIOLOGICAL SCIENCES

BOTANY

1. HISTOLOGY AND PHYSIOLOGY.—A study of the tissues and organs of plants and of the phenomena of nutrition, growth, and irritability. *II* (5).

Assistant Professor HOTTES, Mr. KNIGHT, Miss BALDWIN.

Prerequisite: Entrance credit in botany or Botany II, Chemistry I or Physics 2a.

2. MORPHOLOGY.—The general morphology and taxonomy of plants presented from the standpoint of evolution, including a study of selected types. Occasional field excursions. *I*; (5).

Dr. GLEASON.

Prerequisite: Entrance credit in Botany, or Botany II.

In courses 1 and 2 taken together, either in the order of the numbers or the reverse, there is offered a general introduction to the science for those who desire to continue the study, and as a unified course for general students. Each semester's work is, however, independent, and may be separately credited.

3. CYTOLOGY AND PHYSIOLOGY.—Lectures, laboratory work, and assigned reading. The course extends through the year, but the work of each semester is credited separately under the designations of 3a and 3b. The first semester is devoted mainly to cytology and histology, with special attention to technique; the second, to a study of the influences of external stimuli on growth and movement. *I, II*; (5). Assistant Professor HOTTES. (See Course 14).

Prerequisite: Botany I.

4. TAXONOMY OF SPERMATOPHYTES.—Identification and classification of flowering plants, with especial reference to the flora of

Illinois. Chief attention, in the laboratory, may be given to weeds, grasses, etc., of economic importance; for this, arrangements should be made in the preceding semester. Lectures, assigned reading and laboratory work; field excursions until the close of the season. *I*; (5).

Dr. GLEASON.

Prerequisite: Entrance credit in Botany, or Botany 11.

5. BACTERIOLOGY.—General principles of the science, methods of procedure, and a study of selected forms. Lectures, recitations, and laboratory work. *I, II*; (5). (Course given in the first semester is repeated the second.)

Professor BURRILL, Dr. MACNEAL.

Prerequisite: Chemistry 1 and one year's work in the University, including one semester in botany or zoology.

7. PLANT PATHOLOGY.—A study of the principal groups of parasitic fungi and plant disease due to them, which methods of investigation and control. *I, II*; (5).

Professor BURRILL.

Prerequisite: Botany 1, 2, 4.

8. BACTERIOLOGY.—A detailed study of selected species of bacteria or investigations upon assigned subjects. *I or II*; (2-5).

Professor BURRILL.

Prerequisite: Botany 5.

9. CYTOLOGY AND PHYSIOLOGY, ADVANCED COURSE.—Special laboratory problems in certain phases of cytology and physiology. Students are required to meet for critical discussions of current literature and for reports on research work. *I, II*; (2-5).

Assistant Professor HOTTES.

Prerequisite: Two years' work in botany including Botany 3.

10. SEMINARY.—Reports and discussions upon assigned topics and results of research work. For advanced and graduate students. *I, II*; (1).

Professor BURRILL.

11. INTRODUCTORY COURSE.—Elementary work chiefly upon flowering plants, including their general structure and activities. The laboratory work is supplemented by field observations and by the study of text. The course is planned to offer general students an opportunity of gaining elementary knowledge of the vegetable kingdom. *I*; (5).

Assistant Professor HOTTES, Mr. KNIGHT, Miss BALDWIN.

13. FORESTRY.—A study of forest trees and their collective in-

fluences; the principles and practice of forestry; forestry legislation and economics. Same as Horticulture 9. *II*; (2). Professor
Professor BURRILL.

Prerequisite: Botany 4 or 11.

14. LECTURES OF COURSE 3a.—The plant cell; the physiology of its different constituents and the parts these play in the process of fertilization; various theories of heredity and of species formation. *I*; (2). Assistant Professor HOTTES.

Prerequisite: One year's work in the University, including one semester in botany or zoology.

15. TEACHERS' SEMINARY.—A study of the teaching of botany in secondary schools; methods of instruction; laboratory equipment and material helps, pertinent literature; the teachers preparation and duties. *II*; (1). Professor BURRILL, Assistant Professor HOTTES.

Prerequisite: At least one year of botanical work in the University or equivalent.

16. TAXONOMY OF SPECIAL GROUPS.—Mostly laboratory and herbarium work, and assigned reading. The course extends through the year, but the work of each semester is credited separately under the designations of 16a and 16b. *I, II*; (5). Dr. GLEASON.

Prerequisite: Botany 4.

17. ECOLOGY.—Ecological factors which control the distribution of plants, principles of plant association, and characteristics of some typical plant formations. Lectures and, after the season opens, field work on Saturday forenoons. *II*; (3). Dr. GLEASON.

Prerequisite: Entrance credit in botany or Botany 11.

18. ECOLOGY.—Field and laboratory studies of selected areas, with assigned reading and lectures. The field work must be done wholly or in part during the preceding summer on an area approved by the instructor. *I, II*; *Summer Session*; (2-5). Dr. GLEASON.

Prerequisite: Botany 4, 17.

19. SEMINARY IN ECOLOGY.—Reports and critical discussions of current literature and research work. *I, II*; (1). D. GLEASON.

Prerequisite: Open only to students who have done or are engaged in ecological field work.

20. ECOLOGY AND TAXONOMY.—Special problems upon individual assignments, dealing mainly with the plants of Illinois and vicinity. *I, II*; (2-5). Dr. GLEASON.

Prerequisite: Botany 18 or 16 as selected problems require.

ZOOLOGY

First year students in zoology should usually take courses 10 and 2, which together make an elementary course of a single year. Medical students should follow this year's work with course 3. Course 10 may be taken alone by those desiring only a minimum acquaintance with the facts and methods of zoology, to be followed with course 4 by those wishing, in addition, a general view of the main features and most important generalizations of zoological theory. These two courses are especially recommended to students in the colleges of Literature and Arts and of Agriculture, and to those in the College of Science specializing in some other department.

In second-year work, four groups of courses are open to students—morphological, physiological, ecological, and theoretical. The especially morphological courses are 3 and 7, in embryology and the vertebrate nervous system respectively. Nineteen is an especially physiological course. The ecological courses are those in zoological ecology and geographical distribution (9 and 11), in animal behavior (5), in field zoology (17a, 17b, and 17c), and in microscopic organisms, (18). The purely theoretical courses are 4, 15, and 15a. Course 20 is of equal interest to students in all divisions of the subject.

Those preparing especially to teach zoology in the high school should follow courses 10 and 2 with courses in zoological ecology (9), field zoology (17a and 17b), zoological theory (4), and, if possible, physiological zoology (19). (See also under Entomology.)

10. INTRODUCTORY ZOOLOGY.—An introduction to animal biology for all students. This is a laboratory and lecture course, mainly on the morphology, physiology, and ecology of type forms, and on the more important features of cytology and development. The work leads to an acquaintance with the simpler generalizations of zoological theory, and is a suitable preparation for further work in zoology. *I* or *II*; (5). Professor WARD, Dr. ADAMS and others

2. VERTEBRATE ZOOLOGY AND COMPARATIVE ANATOMY.—*Lectures*, text-book recitations, and laboratory work, mainly on the structure and functions of vertebrate organs. The lectures give the classification of the Chordata, an outline of the early stages of vertebrate embryology, and a brief description of the vertebrate tissues. Systems of organs are considered in respect to their anatomy, func-

tions, ontogeny, and evolution in the vertebrate series. The laboratory work is arranged to meet the needs of medical students on the one hand and of general science students on the other; including, for the first group, a larger number of dissections followed out in greater detail, and, for the second group, the identification of selected Illinois vertebrates. *II*; (5). Dr. CARPENTER.

Prerequisite: An entrance credit in chemistry or Chemistry 1; Zoology 10.

3. VERTEBRATE EMBRYOLOGY.—This course begins with a study of the sex cells, fertilization, and the early stages in the development of the egg. The formation of the organs of the vertebrate body and of the fetal membranes is then considered in detail, with lectures on the development of the chick, and assigned reading in a text-book of human embryology. The laboratory work includes the preparation of embryological material and the study of serial sections of chick and pig embryos. *I, II*; (3). Dr. CARPENTER.

Prerequisite: Zoology 10 and 2.

4. ZOOLOGICAL THEORY.—Lectures and assigned readings on the facts, problems, and theories of evolution and development, and the related topics of variation, heredity, and selection. *II*; (3).

Associate Professor SMITH, Assistant Professor FOLSOM.

Prerequisite: Zoology 10.

5. ANIMAL BEHAVIOR.—Lectures and demonstrations on the reactions of the lower animals to external stimuli. The results of experimental work on the influence of light, heat, gravity, chemical substances, etc., are considered with reference to the habits of animals in their normal environment. The course will include such studies of sense organs and adaptive structures as may be necessary. *I*; (2). Dr. CARPENTER.

Prerequisite: Zoology 10, or Psychology 1.

7. THE STRUCTURE AND FUNCTIONS OF THE VERTEBRATE NERVOUS SYSTEM.—Lectures and laboratory work on the structure of the vertebrate nervous system, including a study of the grouping and chaining of the neurones to form the central and peripheral nervous organs; of the nervous impulse; of the stimulation of the sense organs; and of various reflex actions. The work will include dissections, practice in the preparation of nervous tissues for the microscope, and experimental physiological work. *II*; (3).

Dr. CARPENTER.

Prerequisite: Zoology 10.

9. ANIMAL ECOLOGY.—This course is intended as an introduction to the study of the relation of animals to their natural environment as illustrated by the local fauna. Field trips are made for the study of the animals and the conditions under which they live, and for the instruction in methods of observation and the making of notes and collections. In the laboratory the specimens collected are observed and determined, reports are prepared, and a working knowledge of the literature is acquired. Principal attention is given to insects, mollusks, reptiles, amphibians, and fishes. *II*; (5).

Dr. ADAMS.

Prerequisite: Zoology 10.

11. PRINCIPLES OF ZOOGEOGRAPHY.—An introduction to the study of the geographic distribution of animals, in which particular attention is given to the faunas of North America and of the State of Illinois. The fauna is considered in its relation to the complete ecological environment—climate, physiography, geology, vegetation, etc.—and from the standpoint of its origin and its dynamic relations. This course is of special value to students and teachers of biology, geography, geology, and commercial geography. It consists of lectures, laboratory work on maps, and field excursions. Two or three lectures a week. Saturday excursions, to be arranged. *II*; (3 or 5).

Dr. ADAMS.

Prerequisite: Zoology 10.

15. VARIATION AND HEREDITY.—A course of lectures and reference reading designed to give a general survey of the results obtained by the application of modern methods in the study of variation and heredity. A knowledge of the methods is acquired from exercises in handling data gathered from various sources. For accompanying laboratory work see 15a. *I*; (2). Associate Professor SMITH

Prerequisite: Zoology 10.

15a. STATISTICAL DATA.—Laboratory work involving the collection of data suitable for a study of the variations and correlations of structure in some suitable organism may be elected in connection with Course 15. The extensive collections of insects, fishes, and plankton material in the possession of the State Laboratory of Natural History are available for the purpose of this course. *I, II*; (1 to 3).

Associate Professor SMITH.

Prerequisite: Zoology 10.

17a FIELD ZOOLOGY.—A course whose main object it is to gain as comprehensive a knowledge as practicable of the animal life of a restricted locality. Collection, preservation, and identification of various kinds of animals, together with observations of the habits, life histories, and relations to environment of selected forms constitute the major part of the work. The work is so planned as to make it a desirable course for prospective teachers of zoology. *I*, (3). Associate Professor SMITH.

17b. FIELD ORNITHOLOGY.—A course especially designed to give an acquaintance with the birds of the vicinity. Identification, food relations, seasonal distribution and migration activities receive chief attention. Students are advised to provide themselves with opera or field glasses. *II*; (3). Associate Professor SMITH.

17c. ADVANCED FIELD ZOOLOGY.—This course is a continuation of 17a and 17b, and provides an opportunity for more intensive work on more restricted problems in connection with the local fauna. A taxonomic, distributional, or ecological problem is studied, and the work may be made introductory to subsequent investigation in this field. *I, II*; (3 to 5). Associate Professor SMITH, Dr. ADAMS.

20. CURRENT LITERATURE.—The instructors and advanced students of the department will meet at stated intervals as a journal club for the presentation and discussion of the results of recent zoological investigation. This course is open to all qualified students of zoology, and should be taken by those intending to graduate with a thesis. *I, II*; (1).

Prerequisite: One year of Zoology.

8. THESIS INVESTIGATION.—Candidates for graduation who select a zoological subject as a thesis are required to spend three hours a day during their senior year in making a detailed investigation of the selected subjects. While this work is done under the general supervision of an instructor, it is in its methods and responsibilities essentially original work. *I, II*; (5).

Professor WARD, Associate Professor SMITH, Dr. CARPENTER, Dr. ADAMS.

Prerequisite: Two years in zoological courses.

ENTOMOLOGY

Entomology as taught at the University is distinctly differentiated from the work in zoology. Those preparing for service as economic entomologists should take, if possible, all the courses offered except course 5. Students preparing for the teaching of zoology should take either 2 and 4, or 3 and 4, or, if possible, all three of these courses.

2. GENERAL ENTOMOLOGY.—This course and Entomology 3 form a year's connected major work in entomology, covering substantially the whole field. The present course is devoted mainly to field entomology in the fall and later to the morphological and physiological aspects of the subject. Beginning with the collection and preservation of specimens and the making of field observations, it is continued by laboratory studies of typical insects, made with special reference to the recognition of adaptive structures, and experimental work intended to determine their exact utilities. *I*; (5).

Assistant Professor FOLSOM.

Prerequisite: Zoology 10 or Entomology 4.

3. GENERAL ENTOMOLOGY.—To be taken either with or without the preceding course. The classification and determination of insects, the study of life histories in the insectary and by field observation, and the collection of information with respect to the ecological relations of insects, are the principal objects of this course. *II*; (5).

Assistant Professor FOLSOM.

Prerequisite: Zoology 10.

4. INTRODUCTION TO ECONOMIC ENTOMOLOGY.—Intended especially for students in the College of Agriculture. A lecture, field and laboratory course acquainting the student with the general principles and essential elements of economics entomology. This course may be followed by one or more special courses corresponding to the subdivisions of the departments of agriculture and horticulture, and to be taught in connection with them. Section A, for students of agriculture. *I*; *first half*; ($2\frac{1}{2}$). Section B, for students of horticulture. *II*; *second half*; ($2\frac{1}{2}$).

Professor FORBES, Assistant Professor FOLSOM.

5. ADVANCED ENTOMOLOGY.—Under this head students desiring advanced work in entomology, especially as a preparation for thesis work in this subject, are individually provided for on consultation with the instructors. The course may be made to cover one

or two semesters and to earn a three-hour or a five-hour credit in each. At least a three-hour course for one semester will be required as a preparation for entomological thesis work. *I, II; (3 to 5).* Professor FORBES or Assistant Professor FOLSOM.

Prerequisite: Entomology 2 and 3.

6. **THESIS INVESTIGATION.**—Students specializing in entomology select a thesis subject, preferably during the junior year. They are expected to give three hours a day to investigation upon it, under the supervision of an instructor, during their senior year. *I, II; (5).* Professor FORBES, Assistant Professor FOLSOM.

Prerequisite: At least a three-hour course in Entomology 5.

7. **SYSTEMATIC ENTOMOLOGY.**—This course, while primarily entomological, is designed to be of general use to students of biology. The lectures includes a historical and critical survey of the systems of classification; a discussion of the aims and methods of classification; the nature of species, genera, and other groups, and the rules of nomenclature; the preparation of taxonomic articles, involving the study of bibliography, synonymy, analytical keys, etc. These subjects receive practical treatment in the laboratory, and to qualified students the unworked material of the State Laboratory of Natural History is available for study. *I, II; (3).*

Assistant Professor FOLSOM.

Prerequisite: A semester course in zoology or entomology.

8. **ADVANCED ECONOMIC ENTOMOLOGY.**—A course of lectures, recitations, and field and laboratory work intended to prepare students for service as economic entomologists in state and government positions. Agronomy 7 and Horticulture 1, 2 and 3, should also be taken as a part of this preparation. *I, II; (3).*

Professor FORBES, Assistant Professor FOLSOM.

Prerequisite: Entomology 2, 3 and 4.

PHYSIOLOGY

1. **HISTOLOGY.**—This course consists of a study of the fundamental mammalian tissues, and the microscopic anatomy of the organs. It entitles the student to full medical credit in histology. Lectures and laboratory daily 10-12. *I; (5).*

Assistant Professor McCLELLAN, Dr. STANLEY.

Prerequisite: Physics 2a; Chemistry 1, 2, 3, 5a, 9, 9c; Zoology 2, 3.

2. MAJOR COURSE.—This course will include a study of the physiology of nerve and muscle, circulation, respiration, secretion, digestion, metabolism, etc., etc., entitling student to full credit in physiology in the medical school. Lectures and laboratory work daily 8-12. *II*; (10). Assistant Professor McCLELLAN, Dr. STANLEY.

Prerequisite: Same as for Physiology I.

3. UNDERGRADUATE THESIS.—This course is offered to undergraduates who wish to take a thesis course.

4. MINOR COURSE.—Especial emphasis is laid upon those facts that serve as a basis for practical hygiene, and for helping students to teach physiology in high schools. Lecture demonstrations, recitations, and laboratory work. Students who have had chemistry and zoology in high schools only, may be admitted to the course at the option of the instructor. *II*; (5).

Assistant Professor McCLELLAN, Dr. STANLEY.

Prerequisite: Chemistry I; Zoology 10 or I.

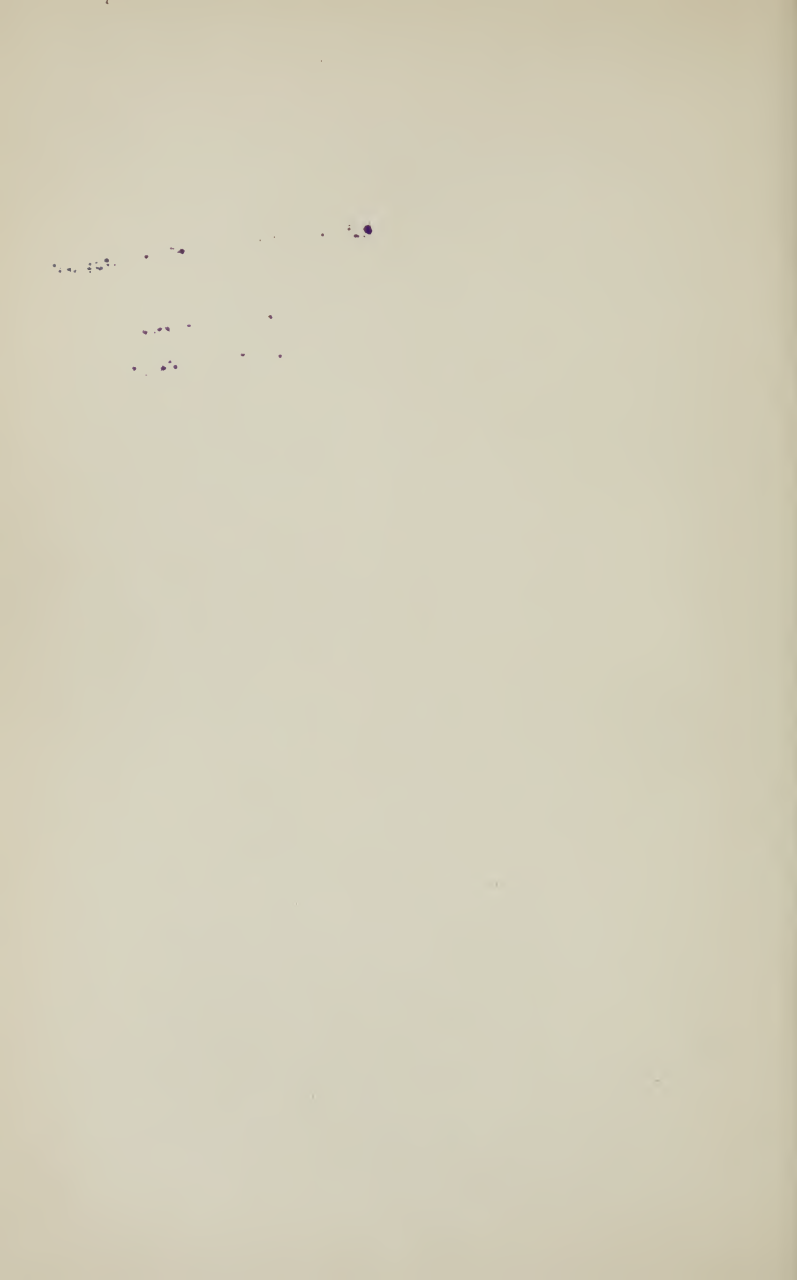
5. SPECIAL PHYSIOLOGY.—This course is given to meet an emergency, which sometimes arises, when a student wishes to take up a special line of work not specified in one of the other courses, and not involving the preparation of a thesis. At the discretion of the head of the department students may register for such work. Arrange details with the instructor.

6. HYGIENE.—This course must be taken by young women who take physical training for credit. The course deals with those practical hygienic questions of everyday life that are wholly or in large part under the control of each individual. *I*; (1). Dr. KOLLOCK.

INDEX

- Admission, 13: by examination, 22; by high school certificate, 22; by transfer of credits, 23; subjects accepted for, 14; description of, 15; subjects required for, 14; as special students, 23; to advanced standing, 23.
- Advanced standing, admission to, 23.
- Aid, beneficiary, 43.
- Aims and scope of the College, 13.
- Algebra, for admission, 15.
- Art and Design, description of courses in, 45.
- Astronomy: description of courses in, 100; for admission, 15.
- Banking, course in, 32.
- Beneficiary aid, 43.
- Biological sciences, description of courses in, 122.
- Board, 45.
- Board of Trustees, 4.
- Botany: description of courses in, 122; for admission, 15.
- Bryan prize, 41.
- Business administration, course of instruction in, 29.
- Business course, 30.
- Calendar, 5.
- Chemistry: description of courses in, 112; for admission, 15.
- Civics, for admission, 16.
- Commercial geography, for admission, 16.
- Classics, description of courses in, 47.
- Class of 1895 Loan Fund, 43.
- Consular service, course for, 31.
- Contests and prizes, 39. oratorical, 40.
- County scholarships, 41.
- Courses, general description of, see Description of courses.
- Courses of instruction, 28; banking, 32; business administration, 29; consular service, 31; household administration, 35; journalism, 34; preliminary to law, 37; railway administration, 33; railway transportation, 33.
- Degree: granted, 24; requirements for, 24.
- Description of Courses, 45: art and design, 45; astronomy, 100; biological sciences, 122; botany, 122; chemistry, 112; economics, 73; education, 96; English, 60; entomology, 129; French, 55; geology, 117; German, 50; Greek, 47; history, 68; household science, 88; Italian, 58; Latin, 49; mathematical and physical sciences, 100; mathematics, 100; philosophy, 91; physics, 109; physiology, 130; political science, 83; Provencal, 60; psychology, 93; public speaking, 67; Scandinavian, 55; social sciences, 68; sociology, 87; Spanish, 59; Swedish, 55; zoology 125.
- Drawing, for admission, 16.
- Economics, description of courses in, 74.
- Education, description of courses in, 96.
- Edward Snyder department of Students' Aid, 43.
- Electives, 26.
- English, note on major in, 27.
- English composition and rhetoric, for admission, 16.
- English language and literature, description of courses in, 60.
- English literature, for admission, 16.
- Entomology, description of courses in, 129.
- Examination: admission by, 22; for scholarships, 41.
- Engineering subjects, counted for A B degree, 38.
- Expenses, 44.
- Faculty of the College, 9.
- Fees, 44.
- French: as a major, 27 note: description of courses in, 55; for admission, 17.
- Freshman required subjects, 26.
- Freshmen, subjects open to, 28.
- General Assembly scholarships, 42.
- Geology, description of courses in, 117; for admission, 18.
- Geometry, for admission, 18.
- German: as a major, 27 note: description of courses in, 50; for admission, 18.
- Graduation: requirements for, 24; engineering courses counted for, 38; law courses counted for, 36.
- Greek, description of courses in, 47; for admission, 19.
- Groups of subjects, stated, 24.
- Hazleton prize medal, 39.
- History: description of courses in, 68; for admission, 19.
- Honorary societies, 39.
- Honors, 38.
- Hour, definition of, 24.
- Household administration, course in, 35.
- Household science: description of courses in, 88; scholarships, 42.
- Italian, description of courses in, 58.
- Journalism: course in, 34; description of courses in, see English composition.
- Language and literature, description of courses in, 47.
- Latin: description of courses in, 49; for admission, 20.
- Law, preliminary course, 37.
- Law studies counting for A B degree, 36.
- Legal study and college work, 36.
- Libraries, 8.
- Literature and Arts faculty, 9.
- Major: definition of, 25; in English, French, and German, 27 note.

- Major electives, 27.
Manual training, for admission, 20.
Mathematical and physical sciences, description of courses in, 100.
Mathematics, description of courses in, 102.
Military: decorations, 39; scholarships, 43.
Minor electives, 27.
Minors in other colleges, 28.
Oratorical contests, 40.
Philosophy, description of courses in, 91.
Physics: description of courses in, 109; for admission, 20.
Physical geography, for admission, 20.
Physiology: description of courses in, 130; for admission, 21.
Political science, description of courses in, 83.
Prizes and contests, 39.
Provençal, description of courses in, 60.
Psychology, description of courses in, 93.
Public speaking, description of courses in, 67.
Railway administration, course in, 33.
Railway transportation, course in, 33.
Requirements for graduation, 24.
Rhetoric, see English.
Romance languages, description of courses in, 55.
Scandinavian languages, description of courses in, 55.
Scholarships, 41.
Senior credit in freshman courses, 26.
Social sciences, description of courses in, 68.
Societies, honorary, 39.
Sociology, description of courses in, 87.
Spanish, description of courses in, 59.
Special students, terms of admission, 23.
Swedish, description of courses in, 55.
Transfer of credits, admission by, 23.
Trustees, board of, 4.
Unit, definition of, 14.
University general statement, 7.
University gold medal, 40.
University, honors, 38.
Zoology, description of courses in, 125 for admission, 21.



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CIRCULAR OF INFORMATION

OF THE

College of Literature and Arts

1910-11



PUBLISHED BY THE UNIVERSITY

URBANA—CHAMPAIGN

1910

COLLEGE OF LITERATURE AND ARTS

CIRCULAR OF INFORMATION



PUBLISHED BY THE UNIVERSITY

1910

CONTENTS

	Page
Board of Trustees.....	4
University Calendar	5
The University	6
Libraries	7
College of Literature and Arts.....	8
Faculty	8
Aims and Scope.....	12
Admission	13
Requirements for Graduation.....	25
Arrangement of Courses.....	28
Courses in Business Administration.....	30
Household Administration	36
Course Preliminary to Law.....	37
Combined Arts and Engineering Course.....	39
Honors	39
Honorary Societies	40
Contests and Prizes	40
Scholarships	43
Beneficiary Aid....	44
Expenses	45
Associations, Societies, and Clubs.....	47
Description of Courses.....	50
Index	

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1910

FIRST SEMESTER, 1910-1911

Sept. 14, Wednesday, 8 a. m.	Entrance examinations begin
Sept. 19, 20, Monday and Tuesday, 8 a. m. to 5 p. m.	Registration days
Sept. 21, Wednesday, 8 a. m.	Instruction begins
Sept. 21, Wednesday, 4 p. m.	Freshman convocation
Nov. 1, Tuesday	Latest day for announcing thesis sub- jects
Nov. 23, Wednesday, 12 m.	Thanksgiving recess begins
Nov. 28, Monday, 12 m.	Instruction begins
Dec. 22, Thursday, 12 m.	Holiday recess begins
1911.	
Jan. 3, Tuesday, 12 m.	Instruction begins
Feb. 2, Thursday, 5 p. m.	First semester ends

SECOND SEMESTER, 1910-1911

Feb. 6, 7, Monday and Tues- day, 8 a. m. to 5 p. m.	Registration days
Feb. 8, Wednesday, 8 a. m.	Instruction begins
Feb. 22, Sunday	Lincoln day
April 6, Thursday, 12 m.	Easter recess begins
April 11, Tuesday, 12 m.	Instruction begins
May 19, Friday evening	Interscholastic oratorical contest
May 18, 19, 20, Thursday to Saturday	Public school art exhibit
May 20, Saturday	Interscholastic athletic meet
May 30, Tuesday	Military day
May, between 15 and 31	} Hazelton prize drill Annual inspection Company competitive drill
June 1, Thursday	Latest day for acceptance of theses
June 1, Thursday, 8 a. m.	Semester examinations begin
June 8, Thursday, 5 p. m.	Semester examinations close
June 11, Sunday	Baccalaureate address
June 12, Monday	Class day
June 13, Tuesday	Alumni day
June 14, Wednesday	Fortieth annual commencement

THE UNIVERSITY

The University of Illinois is situated in Champaign county, in the eastern central part of the state, between the cities of Urbana and Champaign, and within the corporate limits of the former. It is one hundred and twenty-eight miles south of Chicago, at the junction of the Illinois Central, the Cleveland, Cincinnati, Chicago, and St. Louis, and the Wabash railroads. The country around is a rich and prosperous agricultural region. The cities of Urbana and Champaign have, together, a population of about 20,000. They are connected by an electric street railway, which runs through the University grounds, with ten-minute service. The University station of the Urbana postoffice is in the Library Building.

The University comprises the following colleges and schools, part of them located at Urbana and part of them in Chicago. Those at Urbana are:

The Graduate School.

The Colleges of Liberal Arts, including the College of Literature and Arts, and the College of Science, the School of Education, and the Courses in Business Administration.

The College of Engineering, including the School of Railway Engineering and Administration.

The College of Agriculture.

The College of Law.

The School of Library Science.

The School of Music.

Those in Chicago are:

The College of Medicine.

The School of Pharmacy.

The College of Dentistry.

In connection with the College of Agriculture the Agricultural Experiment Station for Illinois is maintained at Urbana, partly by State and partly by Federal appropriations.

The Engineering Experiment Station, established by the State Legislature in 1903, is at Urbana, in connection with the College of Engineering.

The offices of the State Laboratory of Natural History, State Entomologist, State Water Survey, and State Geological Survey are located at Urbana.

LIBRARIES

The general University library includes all the books belonging to the colleges and schools of the University which are situated in Urbana. The libraries of the Colleges of Medicine and Dentistry and the School of Pharmacy are in Chicago.

The *General Library* is the central collection of books housed in the Library building, and is for the use of the whole University. It contains over 150,000 bound volumes and over 20,000 pamphlets. The corps of instruction and administrative officers of the University, the graduate students, and the members of the senior class have direct access to the shelves; other students may have this privilege upon recommendation by their instructors. All students have the direct use of 10,700 volumes in the reading-rooms. The library receives 1,675 periodicals, the current numbers of which are available in the east tower room. As a part of the General Library are included several special collections, among them being the following:

The Dziatzko collection of Library Economy, bought in 1905, the entire library of Karl Dziatzko, librarian of Göttingen University. 300 volumes; 250 pamphlets. Location: Library school room.

The Dittenberger collection of the Classics, bought in 1907, the entire library of Wilhelm Dittenberger, professor of Classical Philology in the University of Halle. 5,600 items. Location: Classical seminar room.

The Heyne collection, bought in 1909, the entire library of Professor Moritz Heyne of the University of Göttingen. It contains about 5,200 volumes, and is rich in the general field of German philology and especially in lexicography.

The Karsten collection, principally of French and German philology and literature, is the library of the late Professor Karsten, and was presented by Mrs. Karsten.

MASON LIBRARY OF WESTERN HISTORY

The valuable library of western history collected by Edward G. Mason, Esq., long president of the Chicago Historical Society, is in the Public Library of the city of Champaign, and is accessible to University students.

COLLEGE OF LITERATURE AND ARTS

THE FACULTY*

EDMUND JANES JAMES, Ph.D., LL.D., President.

EVARTS BOUTELL GREENE, Ph.D., Dean.

GEORGE HENRY MEYER, A.M., Assistant Dean.

In Art and Design—

EDWARD JOHN LAKE, B.S., Assistant Professor.

MARY MINERVA WETMORE, Instructor.

CHARLES FABENS KELLEY, A.B., Instructor.

In Classics—

HERBERT JEWETT BARTON, A. M., Professor.

CHARLES MELVILLE MOSS, Ph.D., Professor.

WILLIAM ABBOTT OLDFATHER, Ph.D., Associate Professor.

ARTHUR STANLEY PEASE, Ph.D., Assistant Professor.

HOWARD VERNON CANTER, Ph.D., Associate.

In Germanic Languages—

German

JULIUS GOEBEL, Ph.D., Professor.

OTTO EDUARD LESSING, Ph.D., Associate Professor.

GEORGE HENRY MEYER, A.M., Assistant Professor.

NEIL CONWELL BROOKS, Ph.D., Assistant Professor.

DAISY LUANA BLAISDELL, A.M., Instructor.

JAMES ALBURN CHILES, Ph.D., Instructor.

CHARLES MARSHALL POOR, Ph.D., Instructor.

CHARLES ALLYN WILLIAMS, Ph.D., Instructor.

Scandinavian Languages.

GEORGE TOBIAS FLOM, Ph.D., Assistant Professor.

In Romance Languages—

THOMAS EDWARD OLIVER, Ph.D., Professor (on leave).

DAVID HOBART CARNAHAN, Ph.D., Associate Professor.

JOHN DRISCOLL FITZ-GERALD, II, Ph.D., Assistant Professor,

ARTHUR ROMEYN SEYMOUR, Ph.D., Associate.

FLORENCE NIGHTINGALE JONES, Ph.D., Instructor.

ATTILIO FILIPPO SBEDICO, Ph.D., Instructor.

DAVID SIMON BLONDHEIM, Ph.D., Instructor.

*The following list includes not only the departments primarily associated with the College of Literature and Arts, but also those in other divisions of the University whose work is most closely related to that of this College. The names of assistants are omitted.

In English—

DANIEL KILHAM DODGE, Ph.D., Professor.
THOMAS ARKLE CLARK, B.L., Professor.
EDWARD FULTON, Ph.D., Associate Professor.
STUART PRATT SHERMAN, Ph.D., Associate Professor, Chairman.
EDWARD CHAUNCEY BALDWIN, Ph.D., Assistant Professor.
HARRY GILBERT PAUL, Ph.D., Assistant Professor.
FRANK WILLIAM SCOTT, A.M., Associate, Secretary.
ERNEST MILTON HALLIDAY, A.B., LL.B., Associate.
THACHER HOWLAND GUILD, A.M., Associate.
HARRIE STUART VEDDER JONES, Ph.D., Associate.
MARTHA JACKSON KYLE, A.M., Instructor.
STEPHEN FAUNCE SEARS, A.M., Instructor.
JACOB ZEITLIN, Ph.D., Instructor.
EARL LOCKRIDGE BRADSHER, A.M., Instructor.
HERBERT LE SOURD CREEK, Ph.D., Instructor.

In History—

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SOLON JUSTUS BUCK, A.M., Research Assistant.

In Economics—

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In Political Science—

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In Sociology—

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In Philosophy—

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In Psychology—

STEPHEN SHELDON COLVIN, Ph.D., Professor.

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In Education—

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EDWIN LEE NORTON, Ph.D., Instructor.

In Astronomy—

JOEL STEBBINS, Ph.D., Assistant Professor.

FRANK WALKER REED, Ph.D., Instructor.

In Mathematics—

SAMUEL WALKER SHATTUCK, C.E., LL.D., Professor.

EDGAR JEROME TOWNSEND, Ph.D., Professor.

GEORGE ABRAM MILLER, Ph.D., Professor.

HENRY LEWIS RIETZ, Ph.D., Assistant Professor.

CHARLES HERSCHEL SISAM, Ph.D., Assistant Professor.

ARTHUR ROBERT CRATHORNE, Ph.D., Associate.

ROBERT LACY BÖRGER, Ph.D., Instructor.

LEWIS IRVING NEIKIRK, Ph.D., Instructor.

ERNEST BARNES LYTLE, Ph.D., Instructor.

GUSTAV ERIC WAHLIN, Ph.D., Instructor.

THOMAS BUCK, Ph.D., Instructor

In Physics—

ALBERT PRUDEN CARMAN, A.M., D.Sc., Professor.

CHARLES TOBIAS KNIPP, Ph.D., Assistant Professor.

FLOYD ROWE WATSON, Ph.D., Assistant Professor.

WILLIAM FREDERICK SCHULZ, E.E., Ph.D., Assistant Professor.

JAKOB KUNZ, Ph.D., Assistant Professor.

WALDEMAR MATTHAEUS STEMPEL, A.M., Instructor.

THOMAS SMITH TAYLOR, Ph.D., Instructor.

In Chemistry—

WILLIAM ALBERT NOYES, Ph.D., LL.D., Professor and Director.

SAMUEL WILSON PARR, M.S., Professor.

EDWARD BARTOW, Ph.D., Professor.

PHILIP BOVIER HAWK, Ph.D., Professor.

RICHARD SYDNEY CURTISS, Ph.D., Assistant Professor.

CLARENCE WILLIAM BALKE, Ph.D., Associate.

EDWARD WIGHT WASHBURN, Ph.D., Associate.

GEORGE MCPHAIL SMITH, Ph.D., Associate.

HELEN ISHAM, Ph.D., Instructor.

GRINNELL JONES, Ph.D., Instructor.

RICHARD HENRY JESSE, Ph.D., Instructor.

LAURIE LORNE BURGESS, Ph.D., Instructor.

ELLEN MCCARTHY, Ph.D., Instructor.

In Geology—

CHARLES WESLEY ROLFE, M.S., Professor.

WILLIAM SHIRLEY BAYLEY, Ph.D., Associate Professor.

THOMAS EDMUND SAVAGE, Ph.D., Assistant Professor.

RUFUS MATHER BAGG, Ph.D., Instructor.

In Botany—

THOMAS JONATHAN BURRILL, Ph.D., LL.D., Professor.

CHARLES FREDERICK HOTTES, Ph.D., Assistant Professor.

WARD J. MACNEAL, Ph.D., Assistant Professor.

CHARLES FRANCIS BRISCOE, A.M., Instructor.

In Zoology—

HENRY BALDWIN WARD, Ph.D., Professor.

FRANK SMITH, A.M., Associate Professor.

CHARLES ZELNY, Ph.D., Assistant Professor.

FREDERICK WALTON CARPENTER, Ph.D., Associate.

CHARLES CHRISTOPHER ADAMS, Ph.D., Associate.

In Physiology—

FRANK CHRISTIAN BECHT, Ph.D., Assistant Professor.

OTIS ORION STANLEY, M.S., M.D., Instructor.

In Entomology—

STEPHEN ALFRED FORBES, Ph.D., LL.D., Professor.

JUSTUS WATSON FOLSOM, Sc.D., Assistant Professor.

In Household Science—

ISABEL BEVIER, Ph.M., Professor.

SUSANNAH USHER, S.B., Assistant Professor.

ANNA ROBERTA VAN METER, M.S., Assistant Professor.

CHARLOTTE MITCHELL GIBBS, A.M., Associate.

NELLIE ESTHER GOLDTHWAITE, Ph.D., Associate.

HELENA M. PINCOMB, B.S., Instructor.

HARRIET BECKWITH RINAKER, M.S., Instructor.

In Military Science—

BENJAMIN C. MORSE, Major, U. S. A., Professor.

In Physical Training—

GEORGE A. HUFF, Director of the Department of Physical Training.

LEO GREGORY HANA, Instructor.

GERTRUDE EVELYN MOULTON, A.B., Acting Director of Physical Training for Women.

MARY EDITH WILLIAMS, A.M., Instructor.

AIMS AND SCOPE OF THE COLLEGE

The purpose of the College of Literature and Arts is to secure for its students a liberal education including both the humanities and the sciences. Students who complete the course receive the degree of Bachelor of Arts. This College is especially adapted to the needs of the following classes of students:

1. Those who wish to pursue a somewhat general course in the arts and sciences as a basis for later professional or technical studies. It will ordinarily be possible for a good student to arrange his work in such a way as to secure, within six years, a professional or technical degree in addition to that in arts.

2. Students who desire to prepare themselves for teaching. Under the modified elective system a student may specialize to a considerable extent in the particular subject which he wishes to teach and may also find time for courses in education and related subjects which are of interest to teachers generally. Such students should, however, as a rule continue their preparation in the Graduate School.

3. Students who find it necessary to devote a considerable part of their undergraduate course to specific preparation for some particular calling other than teaching. Such vocational training may be secured at present in the Household Science Course and the Courses in Business Administration, including Journalism. Students regularly registered for these courses are subject to the general requirements of the College, but must also meet certain special requirements described below.

ADMISSION

Applicants for admission to the freshman class in the College of Literature and Arts must be at least sixteen years of age, and must offer credit for fifteen units of high school or other secondary school work, so chosen as to include those prescribed below. This credit can be secured by

(a) Examination (page 23).

(b) A certificate from a fully accredited high school (page 23).

(c) Transfer from some other university or college (page 24).

Of the fifteen units¹ required for admission, the following are prescribed for admission to the freshman class in the College of Literature and Arts, and no substitutions are accepted.

LIST A

Algebra	1½	units
English composition	1	unit
English literature	2	units
Geometry, plane	1	unit
History	1	unit
Foreign Language	3	units

In addition to the 9½ units prescribed in List A, each applicant must offer 5½ units as described below. 3½ of these units must be taken from List B, but the remaining 2 may be taken either from List B or List C. No subject is accepted for an amount less than the minimum mentioned in the list.

LIST B

Astronomy	18 weeks	½	unit
Botany	18 or 36 weeks ½ or 1		unit
Chemistry	36 weeks	1	unit
Civics	18 or 36 weeks ½ or 1		unit
Commercial geography ²	18 or 36 weeks ½ or 1		unit
Drawing	18 or 36 weeks ½ or 1		unit
English literature (advanced)	36 weeks	1	unit
French	36 to 144 weeks 1 to 4		units
Geology	18 or 36 weeks ½ or 1		unit
Geometry, solid and spherical	18 weeks	½	unit

¹A unit is the amount of work represented by the pursuit of one preparatory subject, with the equivalent of five forty-minute recitations a week, through 36 weeks; or in other words, the work of 180 recitation periods of forty minutes each, or the equivalent in laboratory or other practice.

²No student will be permitted to present more than 1 unit in geography.

German	36 to 144 weeks	1 to 4	units
Greek	36 to 108 weeks	1 to 3	units
History	36 to 108 weeks	1 to 3	units
Latin	36 to 144 weeks	1 to 4	units
Physics	36 weeks	1	unit
Physical geography ¹	18 or 36 weeks	$\frac{1}{2}$ or 1	unit.
Physiology	18 or 36 weeks	$\frac{1}{2}$ or 1	unit
Zoology	18 or 36 weeks	$\frac{1}{2}$ or 1	unit

LIST C

Agriculture	36 to 72 weeks	1 to 2	units
Bookkeeping	36 weeks.....	1	unit
Business law	18 weeks.....	$\frac{1}{2}$	unit
Domestic science	36 weeks.....	1	unit
Economics	18 weeks.....	$\frac{1}{2}$	unit
Manual training ²	36 to 72 weeks	1 to 2	units

Description of subjects for admission

The amount of work in each of the above subjects which corresponds to the minimum number of credits assigned, is shown by the description of the subjects below:

1. AGRICULTURE.—Courses in agriculture should be arranged for periods of not less than nine weeks each, any two of which may be accepted for a half unit credit, providing the work covered by each be so closely related in its parts as to constitute one of the generally accepted divisions now recognized in agricultural work, namely, crops and crop production, soils and soil fertility, dairy husbandry, animal types and animal nutrition, poultry, fruits and vegetables, landscape gardening, farm mechanics. At least one-half the time should be devoted to laboratory work, and note-books should be presented.

2. ALGEBRA.—Fundamental operations, factoring, fractions, simple equations, involution, evolution, radicals, quadratic equations and equations reducible to the quadratic form, surds, theory of exponents, and the analysis and solution of problems involving these.

3. ASTRONOMY.—In addition to a knowledge of the descriptive

¹No student will be permitted to present more than 1 unit in geography.

²In giving credit for Manual Training the University specifies that the work is to be done by competent teachers, as determined by inspection, and that credit shall not exceed 720 forty-minute periods of work, including the necessary drawing and shop work.

matter in a good text-book, there must be some practical familiarity with the geography of the heavens, with the various celestial motions, and with the positions of the heavenly bodies conspicuous to the naked eye.

4. BOOKKEEPING.—The bookkeeping unit for college entrance should consist of a working knowledge of single and double entry bookkeeping in the usual lines of business. The student should be able to change his books from single to double entry and from individual to partnership. He should understand the use of the various books and papers such as the journal, cash book, sales book, invoice book, bill books, ledger, check book, pass book, special column journals and cash books, and all ordinary books of original and final entry. He should be conversant with the use of bills, receipts, checks, notes, time and sight drafts, acceptances, invoices, deposit tickets, express receipts, statements of account and other papers used in ordinary business transactions. He should keep at least one set of transactions by single entry and at least two sets by double entry in which all of the books and papers above noted would be involved. He should know how to make profit and loss statements, should be able to draw up balance sheets, should be able to analyze and explain the meaning of the items involved in both kinds of statements and should understand the significance of entries and their importance in showing the conditions of a business. The work should be done under the immediate supervision of a teacher and the student should devote at least ten periods of not less than forty minutes full time in class each week for one academic year.

5. BOTANY.—A familiar acquaintance is required with the general structure of plants, and of the principal organs and their functions, derived to a considerable extent from a study of the objects; also a general knowledge of the main groups of plants, and the ability to classify and name the more common species. Laboratory notebooks and herbarium collections should be presented.

6. BUSINESS LAW.—The amount of business law which is accepted is indicated by the ground covered in any of the ordinary text-books on the subject, such as Spencer's *Elements of Commercial Law*, Burdick's *Business Law*, and White's *Elements of Commercial Law*.

7. CHEMISTRY.—The instruction must include both text-book and laboratory work. The work should be so arranged that at least

one-half of the time shall be given to the laboratory. The course, as it is given in the best high schools in one year will satisfy the requirements of the University for the one unit for admission. The laboratory notes, bearing the teacher's indorsement, must be presented in evidence of the actual laboratory work accomplished. Candidates for admission may be required to demonstrate their ability by laboratory tests.

8. CIVICS.—Such amount of study of the United States constitution, its history and interpretation, as is indicated by any of the usual high school text-books on civil government, is regarded as sufficient for one term. The work may advantageously be combined with the elements of political economy.

9. COMMERCIAL GEOGRAPHY.—The amount and character of the work accepted in this subject is indicated by the scope of such books as Redway's *Commercial Geography*, Adams's smaller book on the same subject, the text-book of Gannett, Garrison, and Houston, or Trotter's work.

10. DOMESTIC SCIENCE.—(a) An equivalent of 180 hours of prepared work with at least two recitation periods a week on foods. (b) An equivalent of 180 hours of prepared work with at least one recitation period a week in clothing. (c) An equivalent of 180 hours of prepared work with at least two recitation periods a week on the home. (Two periods of laboratory work are considered equivalent to one period of prepared work.)

1. Of the above, (a) will be accepted as a unit's work.

2. Two half units taken from (a) and (b), or (a) and (c), or (b) and (c) will be accepted as a unit's work. The work is to be done by trained teachers with individual equipment, as determined by inspection.

11. DRAWING.—Free-hand or mechanical drawing or both. Drawing-books or plates must be submitted. The number of credits allowed depends on the quantity and quality of the work submitted.

12. ECONOMICS.—The principles of economics, with economic history, as given in any good elementary text-book.

13. ENGLISH COMPOSITION AND RHETORIC.—Correct spelling, capitalization, punctuation, paragraphing, idiom, and definition; the elements of rhetoric. The candidate will be required to write two paragraphs of about one hundred and fifty words each to test his ability to use the English language. This work counts for one unit.

14. ENGLISH LITERATURE.—(a) Each candidate is expected to

have read certain assigned literary masterpieces, and will be subjected to such an examination as will determine whether or not he has done so. With a view to a large freedom of choice, the books provided for reading are arranged in the following groups, from which at least ten units are to be selected, two from each group. Each unit is here set off by semi-colons.

I. The Old Testament, comprising at least the chief narrative episodes in *Genesis*, *Exodus*, *Joshua*, *Judges*, *Samuel*, *Kings*, and *Daniel*, together with the books of *Ruth* and *Esther*; the *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; the *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Vergil's *Aeneid*. The *Iliad*, *Odyssey*, and the *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare: *Merchant of Venice*; *Midsummer Night's Dream*; *As You Like It*; *Twelfth Night*; *Henry the Fifth*; *Julius Caesar*.

III. Defoe: *Robinson Crusoe*, Part I; Goldsmith: *Vicar of Wakefield*; Scott: either *Ivanhoe* or *Quentin Durward*; Hawthorne: *House of Seven Gables*; Dickens: either *David Copperfield* or *Tale of Two Cities*; Thackeray: *Henry Esmond*; Mrs. Gaskell: *Cranford*; George Eliot: *Silas Marner*; Stevenson: *Treasure Island*.

IV. Bunyan: *Pilgrim's Progress*, Part I; *The Sir Roger de Coverley Papers* in the *Spectator*; Franklin: *Autobiography* (condensed); Irving: *Sketch Book*; Macaulay: *Essays on Lord Clive* and *Warren Hastings*; Thackeray: *English Humorists*; selections from Lincoln, including the two *Inaugurals*, the *Speeches in Independence Hall and at Gettysburg*, the *Last Public Address*, and *Letter to Horace Greeley*, along with a brief memoir or estimate; Parkman: *Oregon Trail*; either Thoreau's *Walden* or selections from Huxley's *Lay Sermons*; Stevenson: *Inland Voyage* and *Travels with a Donkey*.

V. Palgrave: *Golden Treasury* (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, Burns; Gray: *Elegy in a Country Churchyard*, and Goldsmith: *Deserted Village*; Coleridge: *Ancient Mariner*, and Lowell: *Vision of Sir Launfal*; Scott: *Lady of the Lake*; Byron: *Childe Harold*,

Canto IV, and *Prisoner of Chillon*; Palgrave: *Golden Treasury* (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe: *Raven*, Longfellow: *Courtship of Miles Standish*, Whittier: *Snow Bound*; Macaulay: *Lays of Ancient Rome*, and Arnold: *Sohrab and Rustum*; Tennyson: *Gareth and Lynette*, *Lancelot and Elaine*, *The Passing of Arthur*; Browning: *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*.

(b) In addition to the above the candidate will be required to present a careful, systematic study, with supplementary reading, of the history of either English or American literature.

(c) The candidate will be examined on the form and substance of certain books in addition to those named under (a). For 1909 to 1911 the books will be selected from the list below. The examination will be of such character as to require a minute study of each of the works named, in order to pass it successfully. The list is:

Shakespeare: *Macbeth*. Milton: *Cosmos*, *L' Allegro*, and *Il Penseroso*. Burke: *Speech on Conciliation with America* or *Washington: Farewell Address*, and Webster: *First Bunker Hill Oration*. Macaulay: *Life of Johnson*; or Carlyle: *Essay on Burns*.

The work outlined in (a), (b), (c) counts for two units.

(d) The three units in English composition, rhetoric, and literature, as described above, are required for all students. A fourth unit may be obtained for one full year's additional work in the study of English and American authors.

15. FRENCH.—*One year's work*.—The candidate must have a thorough knowledge of elementary grammar and the irregular verbs; must be able to pronounce correctly, and to translate simple spoken French phrases. He must have read some 300 pages of easy prose, including one modern comedy, and must be able to translate ordinary French prose at sight.

Two years' work.—In addition to the above, the candidate must show proficiency in advanced grammar, the essentials of syntax, and elementary composition. The reading of not less than 400 pages of standard authors, including two plays of Molière, is required.

Three years' work.—In addition to what has already been de-

scribed the candidate must have had further work in composition. He must also have read not less than 500 pages of standard authors, including Molière, La Fontaine, and Hugo. Some acquaintance with modern lyrics is necessary.

Four years' work—The fourth year should be a broadening and deepening of the work done previously. Careful attention should be given to the more intricate problems of syntax, and the work in composition should be of a high order, taking up the greater difficulties of grammar. Standard and classical authors should be read to the extent of some seven hundred pages.

16. GEOLOGY.—The student must show familiarity with the principles of dynamic and structural geology, and some acquaintance with the facts of historical geology as presented in Scott's *Introduction to Geology*, Brigham's *Text-book of Geology*, or an equivalent, together with at least an equal amount of time spent in laboratory and field work.

The laboratory work should follow one or more of the lines indicated below, and note-books should be presented showing the character and amount of work done. (a) Studies of natural phenomena occurring in the neighborhood, which will illustrate the principles of dynamic geology. Each study should include a careful drawing of the object, and a written description of the way in which it was produced. (b) Studies of well-marked types of crystalline, metamorphic, and sedimentary rocks, which will enable the student to recognize each type and state clearly the conditions under which it was formed. (c) Studies of minerals of economic value, including the characteristics of each, its origin, and the uses to which it is put. (d) Studies of the types of soil occurring in the neighborhood, including the origin of each and the cause of differences in appearance and fertility.

17. GEOMETRY.—(a) *Plane Geometry*. Special emphasis is placed on the ability to use propositions in the solution of original numerical exercises and supplementary theorems.

(b) *Solid and Spherical Geometry*. Applications to the solution of original exercises are emphasized.

18. GERMAN.—*One year's work*.—Elementary grammar. Besides the work in grammar, the student should read not less than 150 pages of easy narrative or descriptive prose.

Two years' work.—In addition to the work outlined under the

one year's requirement, the pupil should know the syntax of cases, uses of the subjunctive and infinitive, complex sentence structure, use of modal auxiliaries and of participial constructions. As an additional reading requirement, from 250 to 300 pages should be translated. Prose composition.

Three years' work.—The third year's study should aim to secure an easy reading knowledge of the language. Standard prose of the grade represented by Freytag, Dahn, or Keller, not less in amount than 100 pages should be read, together with selections from the easier classic dramas. Schiller's *Wilhelm Tell*, or *Jungfrau von Orleans*.

Four years' work.—The fourth year of study should be devoted to such works as Goethe's *Iphigenie*, *Tasso*, *Hermann und Dorothea*, Schiller's *Braut von Messina*, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

19. GREEK.—To obtain one unit, the exercises in any of the beginning books, and one book of the *Anabasis* or its equivalent must be offered. For two units, two books of the *Anabasis* and three of Homer or their equivalents additional to the above must be presented, together with an amount of Greek prose composition equal to one exercise a week for one year. For three units the following is required: three additional books of the *Iliad*, three of the *Odyssey*, and books VI, VII, VIII of Herodotus, or an equivalent from other authors.

20. HISTORY.—No subjects are definitely prescribed in this department, but the following are recommended as best adapted to the high school program:

(a) For a course of one year only, the history of England and of the United States.

(b) For a course of two years, the following subjects, or any two of them: the History of Greece and Rome, the History of England, the History of the United States.

(c) For a course of three years, one year in each of the three subjects named in (b).

The statement of requirements in each subject implies the use of a substantial text-book, some elementary training in the use of reference books, and some instruction in historical geography.

Elementary examinations will be offered in the following subjects: (a) The History of England and the United States. (b)

The History of Greece and Rome. (c) General European History. *Advanced* examinations may also be taken in any one of the subjects above named, which has not been offered to meet the elementary requirements. The examination in each of these subjects is intended to cover one full year of high school work.

21. *LATIN.—First year's work.*—Such knowledge of inflections and syntax as is given in any good preparatory Latin book, together with the ability to read simple fables and stories.

Second year's work.—Four books of Cæsar's *Gallic War*, or its equivalent in Latin of equal difficulty. The ability to write simple Latin based on the text.

Third year's work.—Six orations of Cicero. The ability to write simple Latin based on the text. The simpler historical references and the fundamental facts of Latin syntax.

Fourth year's work.—The scansion of hexameter verse, six books of Virgil, with history and mythology.

22. *MANUAL TRAINING.*—The requirement for one unit is the equivalent of 360 forty-minute periods in manual training following the syllabus prepared by the manual training section of the high school conference.

23. *PHYSICS.*—One year's high school work covering the elements of physical science as prepared in the best of the current high school text-books of physics. Laboratory practice in elementary quantitative experiments should accompany the text-book work. The candidate's laboratory note-book will be considered as part of the examination.

24. *PHYSICAL GEOGRAPHY.*—The amount and character of the work required may be seen by referring to the texts of Gilbert and Brigham, or Davis; the recitations must be supplemented by at least an equal amount of time devoted to laboratory work. The laboratory exercises should follow one or more lines such as are indicated below. Each student should present a note-book showing what he has done.

(a) Studies in mathematical geography in which map and scale only are used. These should embrace such topics as length of a degree in longitude in various latitudes; length and breadth of continents, etc., in degrees and miles; relative latitude of places; distances between cities, etc., in degrees and miles; difference in

length of parallels and meridians; problems in time; location of time belts, etc.

(b) Studies of local topographic features which illustrate the various phases of stream work. Each study should include a drawing or topographic map of the subject and a full, clear description of the way in which it was formed.

(c) Studies of glacial deposits as shown in terminal and ground moraines, kames, eskers, etc.; distribution of dark and light colored soils; occurrence of lakes, ponds, gravel beds, clay banks, and water-bearing strips of sand and gravel.

(d) Studies of stream work as shown in the topographical sheets which may be obtained from the United States Geological Survey at nominal cost.

(e) Studies of the form, size, direction, and rate of movement of high and low barometer areas, and the relation of these to direction of wind, character of cloud, distribution of heat, and amount of moisture in the air, as shown in the daily weather maps. Later these studies should lead to the making of weather maps from the data furnished by the daily papers and the local prediction of weather changes based on the student's own observations.

(f) Studies of the climate of various countries compared with our own, the necessary data being derived from such topographic, rainfall, wind, current, and temperature maps as are found in Sydow-Wagner's or Longman's atlases.

25. **PHYSIOLOGY.**—For one-half unit are required the anatomy, histology, and physiology of the human body and the essentials of hygiene, taught with the aid of charts and models to the extent given in Martin's *Human Body (Briefer Course)*. For more than one-half unit, the course must include practical laboratory work.

26. **ZOOLOGY.**—The instruction must include laboratory work equivalent to four periods a week for a half-year, besides the time required for text-book and recitation work. Note-books and drawings must be presented to show the character of work done and the types of animals studied. The drawings are to be made from the objects themselves and not copied from illustrations, and the notes are to be a record of the student's own observations on the animals examined. The amount of equipment and character of surroundings must, of course, determine the nature of work done and the kind of animals studied, but in any case the student should have at least a fairly accurate knowledge of the external anatomy of each

of eight or ten animals distributed among several of the larger divisions of the animal kingdom, and should know something of their life histories and of their more obvious adaptations to environment. It is recommended that special attention be given to such facts as can be gained from a careful study of the living animal. The names of the largest divisions of the animal kingdom with their most important distinguishing characters and illustrative examples, selected, when practicable, from familiar forms, ought also to be known.

(a) ADMISSION BY EXAMINATION

Each candidate for admission by examination is required to pass examinations on the subjects prescribed for the College of Literature and Arts, and on additional subjects sufficient to make a total of 15 units.

Entrance examinations are on the subjects outlined on pp 13-22 and are given at the University in accordance with a schedule which will be furnished by the Registrar.

EXAMINATIONS SEPTEMBER 14 TO 17, 1910.

All persons who wish to enter the University in September, 1910, except those holding certificates of graduation from accredited schools, and scholarship certificates, and those for whom a transfer of all entrance credits from some other college or university has already been approved, must present themselves at the Registrar's office, Natural History Building, at 8 a. m., Wednesday, September 14. At that time applications for admission will be received, and applicants will be given all necessary directions as to examinations.

(b) ADMISSION BY CERTIFICATE FROM AN ACCREDITED HIGH SCHOOL

One wishing to enter the University from an accredited school must furnish the Registrar an official certificate of his preparatory work. If the certificate meets in full the requirements for admission to the college or school in which the course which the candidate wishes to pursue is given he will be granted a permit to enter. If the certificate is deficient, either because the school is not fully accredited or because the candidate has not taken prescribed and other acceptable work in sufficient amount, he may be admitted as

a "conditioned" student, *provided* the deficiencies do not exceed two units and are not in work which should precede the prescribed courses of the first semester. The conditioned student must clear off all conditions before registering the second year.

Blank certificates and applications for admission may be had of the Registrar and should be filled and sent to him for approval before the date of registration.

(c) ADMISSION BY TRANSFER OF ENTRANCE CREDITS FROM OTHER COLLEGES OR UNIVERSITIES

A person who has been admitted to another college or university of recognized standing will be admitted to this University upon presenting a certificate of honorable dismissal from the institution from which he comes and an official statement of the subjects upon which he was admitted to such institution, provided it appears that the subjects are those required here for admission by examination, or real equivalents. The candidate should submit such papers to the Registrar before the time of entrance.

ADMISSION TO ADVANCED STANDING

After matriculation, an applicant may secure advanced standing either by examination or by transfer of credits from another college or university.

1. *By examination.*—Advanced standing is granted only by examination, unless the applicant is from a fully accredited school. In such case, credit may be obtained as explained in the next paragraph.

2. *By transfer of credits.*—Credits from another college or university, or from a fully accredited high school, may be accepted for advanced standing. An applicant for such credit must present a certified record of work done in the institution from which he comes, and, except in cases of transfer from high schools must also present a certificate of honorable dismissal.

SPECIAL STUDENTS

Persons over twenty-one years of age, *not candidates for a degree*, may be admitted to classes in the College of Literature and

Arts for which they are prepared, on special application to the Dean. Every person desiring admission as a special student in this College must present a written application, accompanied by official certificates, indicating the character and extent of his preparatory work and showing honorable dismissal from the school last attended. In order that action may be taken on such applications before registration they should be presented at least one week before the beginning of the semester. In doubtful cases, candidates may be required to take special written examinations. It is the policy of this College to admit as special students only a select group of mature and serious persons who, though unable to meet the formal requirements for entrance, are substantially prepared for work of college grade. Such students are not matriculated; they pay a tuition fee of seven dollars and a half a semester, in addition to the regular incidental fee of twelve dollars. No one may enroll in the University as a special student for more than two years, except upon the recommendation of the faculty of the college in which he is enrolled, and the approval of the Council of Administration.

GENERAL REQUIREMENTS FOR GRADUATION

The only degree given on graduation from the College of Literature and Arts is that of Bachelor of Arts. The following general requirements apply to all candidates for this degree:

A. *University Requirements*.—Each candidate must meet the general University requirements as to residence and registration. He must also secure credit in approved courses (see pages 26-28 below) amounting to 130 hours. An hour is one class period a week for one semester, each class period presupposing two hours' preparation by the student, or the equivalent in laboratory, shop, or drawing room.

B. *Prescribed Studies*.—Subjects specifically prescribed: *Rhetoric*, 1 (6 hours); *Physical Training*, 1 and 1a for men; or 7 and 9 for women; *Military Science*, 1 and 2 for men.

C. *Group Requirements*.—Every candidate must offer a minimum of 8 hours in each of the following groups:

I. English, including English literature and rhetoric.

II. Ancient and modern languages, other than English, including Greek, Latin, Germanic, and Romance languages.

III. The social sciences, including history, economics, political science, and sociology.

IV. Mathematics and philosophy, including mathematics, education, philosophy, and psychology. A candidate who elects mathematics must take at least five hours of it. If a student does not elect mathematics, his elections in this group must include work in at least two of the other departments of the group. That is, if he does not take mathematics, he must take either philosophy and psychology, or philosophy and education, or education and psychology. With the exception of mathematics, no subject of this group is open to freshmen.

V. The natural sciences, including astronomy, botany, chemistry, entomology, geology, physiology, physics, and zoology.

D. *Major Subjects*.—Each candidate must select some one subject to be designated as his major, and secure credit in that subject to the amount of 24 hours. The courses selected for the last two years should include some distinctly advanced work. The subjects which may be recognized as majors in this college are subject to additions from time to time, but are at present as follows: Economics; education; English¹ (including English literature and rhetoric); French²; German³; Greek; history; household science; Latin; mathematics; philosophy; political science; psychology; sociology.

Special requirements and suggestions for students in business courses and in household science are indicated below on pages 30ff and 36, 37 respectively. Students holding scholarships in household science must make that subject their major, and take one of the courses outlined on page 36 below.

E. *Elective Subjects*.—The remainder of the course is made up of electives chosen under the following conditions:

1. Credit is regularly given for courses properly announced in the following subjects: Art and design (the total credit in this department is limited to 20 hours); classics; Germanic languages; Romance languages; English; history; economics (including accounting and commercial law); political science; sociology; phil-

¹A major in English must include 24 hours in addition to English 1 and Rhetoric 1. Of these 24 hours at least 8 must be in English Literature, and at least 4 in Rhetoric.

²A major in French must include 24 hours in addition to French 1.

³A major in German must include 24 hours in addition to German 1 and 3.

osophy; psychology; education; astronomy; mathematics; physics; chemistry (not including technical courses in chemical engineering); geology; botany (except Botany 12); zoology; entomology; physiology; household science.

2. Not more than 40 hours in any one subject may be counted for graduation, except when the student is writing a thesis. In this case he may count, in addition to the 40 hours, the hours of the seminary course in which he does his thesis work. In the department of English a student may take 40 hours in addition to Rhetoric I.

3. No credit is granted in any subject unless the student pursues it for the full time required in the shortest course offered in that subject. For example, if the student elects a course which yields two hours of credit for one semester, he must stay in the class during the semester in order to get any credit at all. In order to secure any credit in a beginning course in a foreign language, a full year's work must be completed.

4. Seniors registered in courses open to freshmen may receive only one half of the credit regularly assigned to such courses. For the year 1910-1911 the following courses are included in this list: Art and Design 1 and 2; Astronomy 1; Botany 11; Chemistry 1; Economics 7, 22, 26; English 1, 2; French 1; Geology 3, 10, 14; German 1, 3; Greek 1; History 1, 11; Household Science 2, 7; Latin 1; Library Science 12; Mathematics 2, 4; Spanish 1; Zoology 10, 17b.

5. A limited amount of credit toward the A.B. degree is ordinarily given for courses offered in other colleges and schools of this University as follows:

Physical Training.—Not to exceed 5 semester hours.

Military Science and Tactics.—Military Science 1 and 2.

Law.—Law 1 (Contracts); Law 2 (Torts); Law 3 (Real Property); Law 6 (Personal Property). The total credit is limited to 17 hours.

Engineering.—General Engineering Drawing 1 and 2 (Mechanical Drawing and Descriptive Geometry); Theoretical and Applied Mechanics 7 and 8 (Analytical Mechanics); Mechanical Engineering 7 or 15 (Thermodynamics); Civil Engineering 10 or 21 (Surveying); Architecture 6 (History of Architecture); Architecture 8 (Architectural Drawing); Architecture 29a (History of Architecture); Architecture 29b (History of Sculpture and Painting); Electrical Engineering 1 and 21, or 2 and 26 (Principles).

Agriculture.—Agricultural Extension 2 (Elementary Agriculture for Teachers); Agronomy 5 (Seeds), for business students only; Agronomy 9 (Soil Physics); Agronomy 15 (Comparative Agriculture); Agronomy 22 (Plant Breeding); Animal Husbandry 7 (Principles of Animal Nutrition); Horticulture 9 (Forestry); Horticulture 10a (Landscape Gardening); Horticulture 12 (Evolution of Horticultural Plants); Horticulture 19 (General Floriculture), for household science students only; Thremmatology 1 (Principles of Evolution as Applied to the Improvement of Domesticated Animals and Plants). The total credit allowed in these agricultural courses will not ordinarily exceed 14 hours.

Library Science.—Selection of Books (Lib. 3); History of Libraries (Lib. 7); Book-making (Lib. 9); General Reference (Lib. 12); Public Documents (Lib. 13). The total credit allowed in Library Science will not ordinarily exceed 14 hours. The course in General Reference (Lib. 12) is of special value to students in the College of Literature and Arts.

Music.—Music 1, 2, 3, 4, and 5 (courses in the history and theory of music).

Courses not listed under paragraphs 1 to 5 above, may not be counted for the degree of A.B., except by special permission of the Dean of the College.

F. *Bachelor's Theses.*—A bachelor's thesis is not generally required in this College. Students of high standing are, however, encouraged to write theses in connection with their major studies. Credit toward the degree is given for thesis work only as a part of the work in some course for which the student is registered. The presentation of a thesis is specifically required of all candidates for special honors. See below page 40.

ARRANGEMENT OF COURSES

FIRST YEAR

The following subjects must be taken during the freshman year: *Rhetoric* 1, three hours each semester; *Military* 2, one hour each semester, and *Military* 1, one hour, second semester (for men); *Physical Training* (Physical Training 1 and 1a for men; 7 and 9

(Physiology 6 for women); *foreign language*, 4 hours each semester.

The following subjects are open to freshmen. The total amount taken in any semester is limited to eighteen hours and should not be less than fifteen. In making his choice, the student must include subjects in at least three of the groups indicated on pp 25, 26.

First Semester:

I. English 1 (4); Rhetoric 1 (3) and 7 (2).

II. French 1 (4) or 2 (4); German 1 (4) or 3 (4) or 4 (4); Greek 1 (4), 3 (4), 5 (3), or 7 (3); Latin 1 (4) or 2 (4); Spanish 1 (4).

III. Mathematics 2 (3) and 4 (2).

IV. Economics 7 (3) and *26 (3); History 1 (4).

V. Astronomy 1 (3); Botany 2 (5), 4 (5) and 11 (5); Chemistry 1* (5) or 1a* (4); Entomology 1 (2); Geology 1 (5), 3 (5), and 14 (3); Zoology 10* (5).

Second Semester:

I. English 2 (4); Rhetoric 1 (3) and 7 (2).

II. French 1 (4) or 2 (4); German 3 (4) or 4 (4) or 5 (4) or 6 (4); Greek 1 (4), 4 (4), 6 (3), or 8 (3); Latin 1 (4) or 2 (4); Spanish 1 (4).

III. Mathematics 3a (2), 6 (5).

IV. Economics 22 (3) and 26* (3); History 1 (4), and 11 (3).

V. Astronomy 4 (5); Botany 1 (5), 16 (5), or 17 (3); Chemistry 1* (5), or 1a* (4); 2 (2) and 3 (3); Entomology 1 (2); Geology 1a (5), 8 (3), and 10 (5); Zoology 2 (5), 10* (5), 17b (2 or 3).

The following subjects not included in any group, are also open to freshmen:

First Semester:

Art and Design 1 (2 or 3).

Household Science 2 (2) and 7 (2).

Library Science 12 (2).

Second Semester:

Art and Design 2 (3).

Household Science 1 (3).

Library Science 12 (2).

*May be taken in either semester, but not in both.

SECOND YEAR

Male students must continue Military 2 throughout the year. Students who have failed to secure credit for any of the prescribed subjects of the freshman year must make up such deficiencies at this time.

Aside from these subjects prescribed for the first two years, each student selects, with the advice of the Dean or other college advisers, such courses as will enable him to meet the requirements for graduation as stated above.

COURSES IN BUSINESS ADMINISTRATION

Courses in economics, accounting, commerce, railway administration, and industry are offered in combination with courses in language, law, and science, with the aim of providing a university training for business life. The combined courses are designed to give the student a knowledge of the general principles that underlie all lines of business, with special training in the work of some particular calling.

ARRANGEMENT OF COURSES

The subjects of study are so arranged as to furnish training for (1) general business, (2) the consular service, (3) banking, (4) insurance, (5) accounting, (6) railway traffic and accounting, (7) railway transportation, (8) newspaper work.

The work of the class-room is supplemented with lectures by practical specialists, and with visits of inspection to industrial and mercantile establishments.

The outlines for the General Business Course, the Course for the Consular Service, the Course in Banking, the Courses in Railway Administration, and the Course in Journalism are given below. *A detailed description of the other courses, together with a full account of the library and other facilities for the work is given in a separate circular, which may be had on application to the Registrar.*

GENERAL BUSINESS COURSE

The general business course is intended for students who wish to get a general knowledge of modern business organization and methods and their relation to the public welfare, without specializing in the details of any particular business. Every student must take work amounting to 15-18 hours' credit per semester. Students desiring mathematics, or taking courses requiring it, should elect it the

first year, omitting Economic Resources (Economics 26), or Economic History of the United States (Economics 22), and Science, which may then be elected the second year. Economic Resources (Economics 26) is repeated the second semester.

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1 and 1a)
Economic Resources (Econ. 26)
Eng. Econ. Hist. (Econ. 7) or
Mathematics (Math. 2, 4) or
Science

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1)
Econ. Hist. U. S. (Econ. 22)
Mathematics (Math. 6) or
Science

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Econ. (Econ. 1)
Amer. Fed'l Gov't (Pol. Sci. 1)
Military (Mil. 2)
History of U. S. (History 3) or
European History (Hist. 1)
Suggested Electives:
Foreign Language continued
Mathematics
Science

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
Business Writing (Rhet. 10)
Military (Mil. 2)
Amer. State Gov't (Pol. Sci. 3)
History of U. S. (Hist. 3) or
European History (Hist. 1)
Suggested Electives:
Foreign Language continued
Mathematics
Science

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
Corporation Management (Econ. 10)
Domestic Commerce (Econ. 28) or
Tariff and Customs Regulations
(Econ. 30)
Municipal Gov't (Pol. Sci. 4)
Suggested Electives:
History
Public Finance (Econ. 5)
Foreign Language continued
Accounting (Acc'y 3)
R'y Hist and Orgn. (Econ. 41)
Fed'l Constitution (Pol. Sci. 5)
Psychology (Psychol. 1)

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
Foreign Commerce (Econ. 29) or
Organization of Ocean Commerce
(Econ. 36) or
U. S. Com. Relations (Econ. 31)
Suggested Electives:
History
Indus. Consolid. (Econ. 11)
Foreign Language continued
Accounting (Acc'y 2)
R'y Administration (Econ. 42)
Logic (Phil. 1b)
Psychology (Psychol. 2)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Seminary (Econ. 18)
Labor Problems (Econ. 12)
Pol. and Soc. Ethics (Phil. 9)
Econ. Hist. of Europe (Econ. 13)
Suggested Electives:
Finan. Hist. of U. S. (Econ. 4)
(See also third year electives)

SECOND SEMESTER

Prescribed Subjects:

Seminary (Econ. 18)
Labor Problems (Econ. 12)
Commercial Law (Law B)
Advanced Econ. Hist. of U. S. (Econ. 14)
Suggested Electives:
Social Reform (Econ. 21)
(See also third year electives)

COURSE FOR THE CONSULAR SERVICE

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1 and 1a)
Economic Resources (Econ. 26)
English Econ. Hist. (Econ. 7) or
European Hist. (Hist. 1)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1)
Econ. Hist. of U. S. (Econ. 22) or
European Hist. (Hist. 1)

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Economics (Econ. 1)
Foreign Language continued
American Fed'l Gov't (Pol. Sci. 1)
Science
Military (Mil. 2)

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
Foreign Language continued
American State Gov't (Pol. Sci. 3)
Business Writing (Rhet. 10)
Science
Military (Mil. 2)

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Domestic Commerce (Econ. 28) or
Tariff and Customs Regulations
(Econ. 30)
Foreign Language continued
Psychology (Psychol. 1)
British Gov't (Pol. Sci. 2a)
International Law (Pol. Sci. 6)
History of U. S. (Hist. 3)
Accounting (Acc'y 1)

SECOND SEMESTER

Prescribed Subjects:

Foreign Commerce (Econ. 29) or
Organization of Ocean Commerce
(Econ. 36)
Foreign Language continued
Psychology (Psychol. 1)
Cont. European Gov'ts (Pol. Sci. 2b)
History of U. S. (Hist. 3)
Accounting (Acc'y 1)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language continued
Public Finance (Econ. 5)
Pol. and Soc. Ethics (Phil. 9)
Seminary (Econ. 18)
Suggested Electives:
Hist. of Latin America and the Phil-
ippines (Hist. 27)
Econ. Hist. of Europe (Econ. 13)
Corporation Management (Econ. 10)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language continued
Consular and Diplom. Service (Econ.
35) or
Commercial Relations (Econ. 31)
American Diplomacy (Pol. Sci. 7)
Commercial Law (Law B)
Seminary (Econ. 18)
Suggested Electives:
Hist. of Latin America and the Phil-
ippines (Hist. 27)
Advanced Econ. Hist. of U. S. (Econ. 14)
Civil War and Reconstruction (Hist. 15)
Europe in 19th Cent. (Hist. 20)

COURSE IN BANKING

The work of the first and second years in banking is the same as in the General Business Course, but students must take advanced algebra (Mathematics 2) which is a prerequisite for the mathematics of investments (Mathematics 23a).

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
 Corporation Management (Econ. 10)
 Public Finance (Econ. 5)

Suggested Electives:

Accounting (Acc'y 3)
 Domestic Commerce (Econ. 28)
 Psychology (Psychol. 1)
 Logic (Phil. 1a)
 History

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1)
 Math. of Investments (Math. 23a)
 State and Local Admin. (Pol. Sci. 13)

Suggested Electives:

Accounting (Acc'y 2)
 Foreign Commerce (Econ. 29)
 Psychology (Psychol. 2)
 Indus. Consolid. (Econ. 11)
 History

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Practical Banking (Econ. 9)
 Finan. Hist. of U. S. (Econ. 4)
 Pol. and Soc. Ethics (Phil. 9)
 Seminary (Econ. 18)

Suggested Electives:

Labor Problems (Econ. 12)
 Tariff and Customs Regulations
 (Econ. 30)
 Contracts (Law 1)

SECOND SEMESTER

Prescribed Subjects:

The Money Market (Econ. 8)
 Commercial Law (Law B)
 Seminary (Econ. 18)

Suggested Electives:

Labor Problems (Econ. 12)
 U. S. Commercial Relations (Econ. 31)
 Contracts (Law 1)

COURSES IN RAILWAY ADMINISTRATION

There are two courses offered under the head of railway administration, one emphasizing those subjects which are of most value to the student interested in the accounting and traffic aspects of railway work, the other laying stress upon the transportation service, properly so called, and intended to prepare men directly for the transportation departments of our railways.

RAILWAY TRAFFIC AND ACCOUNTING

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
 Rhetoric (Rhet. 1)
 Military (Mil. 2)
 Physical Training (P. T. 1 and 1a)
 Algebra and Trig. (Math. 2, 4)
 Economic Resources (Econ. 26)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
 Rhetoric (Rhet. 1)
 Military (Mil. 1, 2)
 Physical Training (P. T. 1)
 Anal. Geom. (Math. 6)
 Econ. Hist. of U. S. (Econ. 22)

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Econ. (Econ. 1)
Calculus (Math. 8a)
Physics (Phys. 1, 3)
Military (Mil. 2)

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
Business Writing (Rhet. 10)
Physics (Phys. 1, 3)
Military (Mil. 2)
History of U. S. (Hist. 3)
Amer. State Gov't (Pol. Sci. 3)

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1, 3)
Corporation Management (Econ. 10)
R'y Hist. and Organ. (Econ. 41)
History of U. S. (Hist. 3)
Traffic Admin. (Econ. 43)

SECOND SEMESTER

Prescribed Subjects:

Accounting (Acc'y 1, 2)
Indus. Consolid. (Econ. 11)
R'y Administration (Econ. 42)
Math. of Investments (Math. 23a)
R'y Transportation (Econ. 44)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

Accounting (Acc'y 4, 6)
R'y Practice (Econ. 45)
Sem. in R'y Admin. (Econ. 18)
Pol. and Soc. Ethics (Phil. 9)

Suggested Electives:

Amer. Fed'l Gov't (Pol. Sci. 1)
Fed'l Constitution (Pol. Sci. 5)

SECOND SEMESTER

Prescribed Subjects:

Nat'l Admin. [Pol. Sci. 12).
Accounting (Acc'y 4, 5)
Foreign R'y Systems (Econ. 47)
Sem. in R'y Admin. (Econ. 18)
Commercial Law (Law B)

Suggested Electives:

State and Local Admin. (Pol. Sci. 13)

RAILWAY TRANSPORTATION

In addition to the prescribed subjects in this course other subjects may be elected where opportunity offers, but six hours of such elections must be from history, political science, more advanced language, or ethics.

FIRST YEAR

FIRST SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1 and 1a)
Gen. Engin. Drawing (G. E. D. 1)
Algebra and Trig. (Math. 2, 4)

SECOND SEMESTER

Prescribed Subjects:

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1)
*Descriptive Geom. (G. E. D. 2)
Anal. Geom. (Math. 6)

SECOND YEAR

FIRST SEMESTER

Prescribed Subjects:

Principles of Econ. (Econ. 1)
Calculus (Math. 7)
Physics (Phys. 1, 3)
Military (Mil. 2)

SECOND SEMESTER

Prescribed Subjects:

Money and Banking (Econ. 3)
Calculus (Math. 9)
Physics (Phys. 1, 3)
Military (Mil. 2)
Anal. Mech. (T. and A. M. 7)
Engines and Boilers (M. E. 11)

*This subject is to be taken for three hours' credit only.

THIRD YEAR

FIRST SEMESTER

Prescribed Subjects:

Corporation Management (Econ. 10)
R'y Hist. and Organ. (Econ. 41)
Traffic Admin. (Econ. 43)
Anal. Mech. and Resist. of Materials
(T. and A. M. 8, 9)

SECOND SEMESTER

Prescribed Subjects:

Business Writing (Rhet. 10)
R'y Administration (Econ. 42)
R'y Transportation (Econ. 44)
Mech. Engin. Lab. (M. E. 13)
Electrical Engin. (E. E. 16)
Surveying (C. E. 10)

FOURTH YEAR

FIRST SEMESTER

Prescribed Subjects:

R'y Practice (Econ. 45)
Sem. in R'y Admin. (Econ. 18)
Accounting (Acc'y 1)
Labor Problems (Econ. 12)
Locomotives (R'y E. 1)
Engin. Materials (T. and A. M. 6)

SECOND SEMESTER

Prescribed Subjects:

Foreign R'y Systems (Econ. 47)
Sem. in R'y Admin. (Econ. 18)
Accounting (Acc'y 1)
Labor Problems (Econ. 12)
R'y Tests (R'y E. 11)
Commercial Law (Law B)

COURSE IN JOURNALISM

FIRST YEAR

FIRST SEMESTER

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 2)
Physical Training (P. T. 1 and 1a)
European History (Hist. 1)
Engl. Literature (Engl. 1)

SECOND SEMESTER

Foreign Language
Rhetoric (Rhet. 1)
Military (Mil. 1, 2)
Physical Training (P. T. 1)
European Hist. (Hist. 1)
Engl. Literature (Engl. 2)

SECOND YEAR

FIRST SEMESTER

Rhetoric (Rhet. 3 or 20)
Principles of Economics (Econ. 1)
Amer. Fed'l Gov't (Pol. Sci. 1)
Military (Mil. 2)
Science

SECOND SEMESTER

Rhetoric (Rhetoric 3 or 20)
Money and Banking (Econ. 3)
Amer. State Gov't (Pol. Sci. 3)
Military (Mil. 2)
Business Writing (Rhet. 10)
Science

THIRD YEAR

FIRST SEMESTER

Newspaper Writing (Rhet. 12)
History of U. S. (Hist. 3)
Fed'l Constitution (Pol. Sci. 5)
Psychology (Psychol. 1)
Corporation Management (Econ. 10) or
Domestic Commerce (Econ. 28)
English Literature

SECOND SEMESTER

Newspaper Writing (Rhet. 12)
History of U. S. (Hist. 3)
Psychology (Psychol. 2)
Indus. Consolid. (Econ. 11) or
Foreign Commerce (Econ. 29)
English Literature

FOURTH YEAR

FIRST SEMESTER

Advanced Newsp. Writ. (Rhet. 15)
 Pol. and Soc. Ethics (Phil. 9)
 General Sociology (Sociol. 1)
 Labor Problems (Econ. 12) or
 Public Finance (Econ. 5)
 International Law (Pol. Sci. 6)
 British Gov't (Pol. Sci. 2a)
 Municipal Gov't (Pol. Sci. 4)

SECOND SEMESTER

Advanced Newsp. Writ. (Rhet. 15)
 Social Reform (Econ. 21)
 Social Control (Sociol. 2)
 Labor Problems (Econ. 12) or
 American History (Hist. 22) or
 Charities and Corrections (Sociol. 5) or
 Europe in 19th Cent. (Hist. 20)
 American Diplomacy (Pol. Sci. 7)

HOUSEHOLD SCIENCE AND ADMINISTRATION

Students who hold scholarships in household science must make this subject their major, and take each semester at least four hours in household science or in subjects required for admission to the household science courses. The suggested course in household administration is described below. Household science students who do not take that course must meet the following requirements.

First Semester: Physical Training 7, Physiology 6, Rhetoric 1, Foreign Language, Chemistry 1, Household Science 2.

Second Semester: Physical Training 7, Rhetoric 1, Foreign Language, Household Science 1, Chemistry 2 and 3.

They must then elect in regular course and finish by the end of the junior year, Botany 5, Chemistry 13a, 9 and 9c, and an additional five hours in botany and zoology. In order to graduate, household science students must also secure credit for Art and Design 1, Architecture 4I (Color Problems), Architecture 29a and 29b (History of Architecture), and Economics 1.

Students in household science must also satisfy the requirements for graduation in the College of Literature and Arts, in so far as these are not covered by the courses above mentioned.

SUGGESTED COURSE IN HOUSEHOLD ADMINISTRATION

FIRST YEAR

FIRST SEMESTER

Rhetoric and Themes (Rhet. 1)
 Free Hand Drawing (Art & Design 1)
 Home Architecture and Sanitation,
 (H. Sci. 2)
 Foreign Language
 Physical Training
 Hygiene 1 (Physiology 6)
 English 1 (Introductory Course:
 English Literature before the
 19th Century)

SECOND SEMESTER

Rhetoric and Themes (Rhet. 1)
 Applied Design (Art & Design 12)
 Foreign Language
 Physical Training
 Introductory Zoology (Zool. 10)

SECOND YEAR

FIRST SEMESTER

Color Problems (Arch. 41)
 Short History of Architecture
 (Arch. 29a)
 Foreign Language or
 History 4 or
 Textiles (H. Sci. 7)
 Inorganic Chemistry (Chem. 1)

SECOND SEMESTER

Foreign Language or History
 (Continued)
 Principles of the Selection and Prepara-
 tion of Food (H. Sci. 1)
 History of the U. S. (History 3)
Suggested Electives:
 Inorganic Chemistry (Chem. 2)
 Qualitative Analysis (Chem. 3)
 History
 Modern Philosophy (Phil. 4)
 Vertebrate Anatomy (Zool. 2)

THIRD YEAR

FIRST SEMESTER

Economic Uses of Food (H. Sci. 6)
 Elementary Psychology (Psych. 1)
 Physiology 4 (Minor Course)
 Economics 1

SECOND SEMESTER

Dietetics (H. Sci. 5)
 Elementary Home Decoration (H.
 Sci. 3)
 Household Art and Clothing (H.
 Sci. 12)
 Elementary Psychology (Psych. 2)
 Economics of the Family (H. Sci. 15)

FOURTH YEAR

FIRST SEMESTER

Household Management (H. Sci. 10)
 History of Home Economics (H. Sci. 13)
 Principles of Accounting (Acc'y 1)
 Economics of the Family (H. Sci. 16)*
 Ethics (Philosophy 7)
 Sociology 1

Suggested Electives:

Sanitary Analysis (Chem. 10a)
 Principles of Education (Edu. 1)
 Comparative and Genetic Sociology
 (Sociol. 3)
 Vertebrate Embryology (Zool. 3)
 Esthetics (Philosophy 8)

SECOND SEMESTER

Principles of Accounting (Acc'y 1)
 Commercial Law (Law B, described
 under courses in Economics)
 Economics of the Family, continued
 (H. Sci. 16)
Suggested Electives:
 History and Criticism of Art (Arch-
 itecture 29b)
 Food Analysis (Chem. 5c)
 Social Phases of Education (Edu. 16)
 Charities, Corrections, and Urban
 Problems (Sociol. 5)
 Physiological Psychology (Psych. 9)
 Vertebrate Embryology (Zool. 6)

*Household Science 16 consists of problems in the economics of the family.
 See Economics 18.

COURSE PRELIMINARY TO LAW

It is recognized by the best authorities on legal education that professional studies in law should be preceded by a thorough course of liberal training in the humanities and the sciences. As a foundation for the study and practice of law, the following subjects offered by this College are of special importance: English, with special reference to composition and public speaking; Latin and French; logic; constitutional and political history; political science; economics; sociology. An outline of a course preliminary to law is given below, page 38.

By the proper selection of his studies it is possible for a prospective law student to take both his degree in arts and his degree in law in six years; and a strong student may be able to take his bachelor's degree in arts at the close of his first year in the College of Law. The following courses in the College of Law, not exceeding a total of 17 hours, may be counted for the degree of bachelor of arts: Law 1 (Contracts); Law 2 (Torts); Law 3 (Real Property); Law 6 (Personal Property). Some of these courses, not exceeding 9 hours, may, by special permission of the Dean, be taken in the junior year. If the student is also a candidate for the degree of LL.B., he should in his fourth year register in the College of Law and pay the usual fee of that College. *Students are not permitted to take this law work until their junior year.* A fee of five dollars is charged for every law subject taken by students who do not pay the regular law school fee. Students admitted to this University from other institutions may count these law courses for the degree of A.B. only on condition of completing at least 30 hours work in residence in subjects offered by the Faculty of the College of Literature and Arts.

In the course outlined below the subjects specifically prescribed for graduation in the College of Literature and Arts are indicated by italics. In general the subjects listed are suggested only and not prescribed. Not more than eighteen hours should be taken in any semester.

FIRST YEAR

FIRST SEMESTER

Military 2
Physical Training 1 and 1a
Rhetoric 1
Foreign Language
 Continental European History (Hist. 1)
 Science

SECOND SEMESTER

Military 1 and 2
Physical Training 1
Rhetoric 1
Foreign Language
 Continental European History (Hist. 1)
 Science

SECOND YEAR

FIRST SEMESTER

Military 2
 Amer. Government (Pol. Sci. 1)
 Hist. of U. S. to 1789 (Hist. 3)
 Principles of Economics (Econ. 1)
 Foreign Language
 Psychology 1
 Public Speaking (Rhet. 7)
 Engl. Lit. before Nineteenth Century
 (Engl. 1)
 Logic (Phil. 1a)
 Amer. Literature (Engl. 16)

SECOND SEMESTER

Military 2
 Amer. State Gov't (Pol. Sci. 3)
 Hist. of U. S. after 1789 (Hist. 3)
 Money and Banking (Econ. 3)
 Foreign Language
 Public Speaking (Psychology 7)
 Engl. Literature in Nineteenth Century
 (Engl. 2)
 Amer. Literature (English 16)
 History of Europe in Nineteenth
 Century (Hist. 20)

THIRD YEAR

FIRST SEMESTER

Constitutional Hist. England (Hist. 4)
 Intercollegiate Debating (Rhet. 13)
 Corporation Management (Econ. 10)
 Principles of Accounting (Acc'y. 1)
 Federal Constitution (Hist. 14)
 Municipal Government (Pol. Sci. 4)
 English Literature, 3 hours.
 Public Finance (Econ. 5)
 Hist. of Illinois (Hist. 17)
 Sociology (Sociol. 1)
 Law of Taxation (Pol. Sci. 8)

SECOND SEMESTER

Constitutional Hist. England (Hist. 4)
 Intercollegiate Debating (Rhet. 13)
 Industrial Consolidations (Econ. 11)
 Principles of Accounting (Acc'y. 1)
 English Literature, 3 hours.
 Administrative Law (Pol. Sci. 10)
 Charities and Corrections (Sociol. 5)
 Elements of Jurisprudence (Pol. Sci. 9)

FOURTH YEAR

FIRST SEMESTER

Contracts (Law 1)
 Torts (Law 2)
 Personal Property (Law 6)
 International Law (Pol. Sci. 6)
 Labor Problems (Econ. 12)
 R'y Organ. and Hist. (Econ. 41)
 Economics of Insurance (Econ. 33)
 Financial Hist. of U. S. (Econ. 4)

SECOND SEMESTER

Contracts (Law 1)
 Torts (Law 2)
 Real Property (Law 3)
 Railway Administration (Econ. 42)
 Political and Social Ethics (Phil. 9)
 Hist. of Civil War and Reconstruction
 Periods (Hist. 15)

COMBINED ARTS AND ENGINEERING COURSE

A graduate of the College of Literature and Arts, whose mathematical training includes the work of the calculus, who has had the usual college course in physics, and who has had sufficient training in the principles of mechanics to enable him to begin the mechanics of the junior year, may receive the degree of Bachelor of Science in the departments of the College of Engineering upon the completion of sixty-eight hours' work in such lines (including thesis) as may be directed by the Faculty. This work may ordinarily be done in two academic years. Candidates for the degree in the department of Architecture are not required to be prepared in calculus or mechanics, but should possess special preparation in drawing. The courses in the College of Engineering which may be counted for the degree of A.B., are listed on page 27 above.

UNIVERSITY HONORS

The University gives public official recognition to such students as attain a high grade of scholarship, by the following system of honors.

Preliminary Honors are assigned on the completion of the sophomore year, on the basis of the scholarship of the student during

the freshman and sophomore years. A condition or a failure disqualifies a student for receiving these honors.

Final Honors are assigned on graduation. The basis for the assignment is the scholarship of the student during the junior and senior years. A condition or a failure received in the junior or senior year disqualifies a student for receiving final honors.

Special Honors are awarded at the close of the senior year. Special honors are planned for students who prefer to concentrate their efforts upon a special course. A student may be a recipient of both final and special honors. No student is eligible for special honors, who, during his senior year, has received a grade of less than eighty per cent in any subject.

The names of all students receiving honors appear in the University catalog.

HONORARY SOCIETIES

Phi Beta Kappa Society.—Each year a certain number of the ranking students of the senior class are elected to membership in the Phi Beta Kappa Society. The number is ordinarily limited to one-fifth of the total membership of the graduating class.

Sigma Xi.—Members of the senior class in the College of Literature and Arts who give "promise of marked ability" in scientific investigation are also eligible to membership in the Sigma Xi Society, which was founded to encourage research in pure and applied science.

DELTA SIGMA RHO is a national honorary fraternity whose membership is confined to university and college debaters and orators.

CONTESTS AND PRIZES

MILITARY DECORATIONS

Bronze medals typical of the University and its Military Department are awarded by the University to the members of the Infantry Company, Artillery and Signal Detachments which shall score the greatest number of points at the annual competitive drill, held at some time between May 15 and May 31. The members of the company rifle team making the highest score at gallery target practice are also awarded medals. The medals so awarded become

the permanent property of the recipients. A complete roster of the winning organizations is published in the University catalog for the following year.

THE HAZELTON PRIZE MEDAL

Captain W. C. Hazelton provided in 1890 a medal, which is awarded, at a competitive drill held at some time between May 15 and May 31, to the best drilled student. Each competitor must have been in attendance at the University at least sixteen weeks of the current college year; must not have had more than four unexcused absences from drill; and must present himself for competition in full uniform.

The award is made for excellence in:

1. Erectness of carriage, military appearance, and neatness.
2. Execution of the school of the soldier, without arms.
3. Manual of arms, with and without numbers.

The name of the successful competitor is published in the University catalog for the following year. He is given a certificate setting forth the facts, and may wear the medal until the fifteenth day of May following, when he must return it for the next competition.

UNIVERSITY GOLD MEDAL

The Board of Trustees provides annually a gold medal which is to be awarded at the annual competitive drill to be held near the close of the year, to the best drilled student. Each student must have matriculated in this University and must have completed one semester's work in Military 1 with a grade of not less than 90, and three semesters' work in Military 2 with a grade of not less than 95; and he must have an average standing of not less than 85 per cent in all his other studies for the preceding semester, which standing shall be determined by the Dean of his college. The name of the winner is published in the University catalog for the following year. The reward is made for excellence in the same details as in the Hazelton contest.

DEBATING AND ORATORY

The University engages yearly in four intercollegiate debates, the teams for which are chosen in a series of competitive preliminaries to which all students are eligible. Through the generosity of

Mr. William B. McKinley prizes are given to every speaker who represents the University either in debating or in oratory.

THE CENTRAL DEBATING CIRCLE OF AMERICA is an association formed by the universities of Illinois, Iowa, Minnesota, Nebraska, and Wisconsin. It holds a debate at each university on the Friday evening next preceding the opening of the holiday recess.

THE STATE UNIVERSITY DEBATING LEAGUE consists of the state universities of Illinois, Indiana and Ohio. Under its auspices three debates are held upon the second Friday in March, each university sending out an affirmative and a negative team.

THE NORTHERN ORATORICAL LEAGUE, consisting of Northwestern University, Oberlin College, and the state universities of Illinois, Iowa, Michigan, Minnesota, and Wisconsin, holds an annual contest in May. The winner receives the Lowden testimonial of one hundred dollars and the speaker awarded second place fifty dollars. The Illinois representative is selected in a competitive contest open to all undergraduates.

THE INTERCOLLEGIATE PEACE ASSOCIATION holds an annual state and inter-state oratorical contest to which this University is eligible. Orations must be upon some phase of the peace question. Cash prizes are offered in these contests.

A FRESHMAN-SOPHOMORE DEBATE and an INTER-SOCIETY DECLAMATION CONTEST are held under the management of the Oratorical Association.

INTERSCHOLASTIC ORATORICAL PRIZE

A medal of the value of twenty dollars, and two of the value of ten dollars each, are offered annually by the University to the high schools of the state for the best oration delivered in a competitive contest between their representatives. This contest takes place in the spring at the time of the interscholastic athletic meet.

THE BRYAN PRIZE

In 1898 Mr. William Jennings Bryan gave to the University two hundred and fifty dollars. From the interest of this sum a prize of twenty-five dollars is offered biennially for the best essay on the science of government. The contest is open to all matriculated undergraduate students. The essays may not be less than three thousand, nor more than six thousand, words in length, and must

be left at the President's office not later than the second Wednesday in May. The prize was offered for the first time in 1901. It will be offered next in 1911.

SCHOLARSHIPS

COUNTY SCHOLARSHIPS

A law passed by the General Assembly of the State of Illinois at the session of 1905 provides that there may be awarded annually to each county of the state one scholarship. The holder thereof must be at least sixteen years of age, and a resident of the county to which he is accredited. He is entitled to free tuition in other than the preparatory and professional schools of the University.

A competitive examination under the direction of the President of the University is held at the county court house in each county of the state upon the first Saturday of June in each year by the county superintendent of schools upon such branches of study as the President of the University may deem best. Questions for such examinations are furnished to the county superintendents of schools prior to such examinations.

Having passed the examination successfully the candidate must then meet in full the requirements for admission to the freshman class and register the following September.

In case the scholarship in any county is not claimed by a resident of that county the President of the University may fill the same by appointing some candidate resident in another county who is eligible therefor.

A student holding a scholarship who shall make it appear to the satisfaction of the President of the University that he requires leave of absence for the purpose of earning funds to defray his expenses while in attendance, may, in the discretion of the President, be granted such a leave of absence, and may be allowed an extension of his scholarship for a period not exceeding six years from the commencement thereof.

GENERAL ASSEMBLY SCHOLARSHIPS

The same act by which the county scholarships described above were established also provides that each member of the General Assembly may nominate annually one eligible person from his dis-

trict for a scholarship in the University granting the same privilege as the county scholarships, and to be conferred under the same conditions with regard to examination, entrance requirements, and registration.

SCHOLARSHIPS IN HOUSEHOLD SCIENCE

The University offers every year to each county in the state, except Cook and Lake, and to each of the first ten congressional districts, one scholarship for prospective students of Household Science.

Appointments are made by the Trustees of the University to scholarships in Household Science upon the recommendation of the County Domestic Science Association. Young women under eighteen years of age and those who have already attended the University are not eligible. Acceptable candidates, residents of counties or districts for which appointments have been made, may be assigned to counties or districts not yet represented.

The scholarships are good for two years and relieve the holders from the payment of the matriculation fee, \$10.00, and the incidental fee, \$24.00 a year. The term of a scholarship may be extended four years, if, before it expires, the holder satisfies in full the requirements for admission to the freshman class of the college in which she is enrolled.

MILITARY SCHOLARSHIPS

Students who have gained three hours in class room military instruction and four in drill practice, are eligible for appointment as commissioned officers of the regiment or battery. Those attaining this rank may be awarded special scholarships, good for one year, and equal in value to the University incidental fees for the same length of time.

BENEFICIARY AID

EDWARD SNYDER DEPARTMENT OF STUDENTS' AID

In 1899 Edward Snyder, Professor of the German language and literature, *emeritus*, gave the University the sum of \$12,000, to be lent to worthy students to enable them to finish their courses in the University. This fund is available for junior, senior, and graduate students who need aid to remain and complete their work. The minimum loan made is fifty dollars, and the maximum loan is one

hundred and fifty dollars to a junior, and two hundred dollars to a senior or graduate student.

Applications for loans must be made in writing and addressed to Vice-President T. J. Burrill, Chairman Loan Fund Committee.

CLASS OF 1895 LOAN FUND

This is a fund of \$100.00 established by the class of 1895, to be lent to needy and deserving students. According to the conditions of the gift, fifty dollars are to be lent annually, and the benefit of the fund is open only to students who, at the time of application, are members of the freshman class. No person may receive the benefit of the fund more than four years. The loan bears interest from the time the recipient leaves the University, and is due, one-half in five years, and one-half in six years, after matriculation. The management of the fund is in charge of the Council of Administration.

EXPENSES

FEES

All fees shall be paid each semester in advance.

Literary, Technological, Scientific, and Agricultural Departments.

MATRICULATION FEE. Each student not holding a scholarship,

upon satisfying the requirements for admission to the

University, pays the matriculation fee of\$10.00

DIPLOMA FEE, payable before graduation, is 5.00

INCIDENTAL FEE. All students, except those holding scholar-

ships, pay each semester an incidental fee of 12.00

TUITION FEE. Students "conditioned" on entrance require-

ments, and "special" students, except special students

holding scholarships, pay each semester a tuition fee of.. 7.50

No deduction is made on account of absence in any course, ex-

cept in case of protracted illness.

LABORATORY FEES AND DEPOSITS. Each student working in labora-

tories, or in the drafting or engineering classes, is required to

make a deposit varying from 50 cents to \$10.00, to pay for

chemicals and apparatus used, and for any breakage or damage.

*Music Fees**College Courses*

A matriculated student, enrolled in this college, pays each semester:

If his home is in Illinois, only the fees of this college.

If his home is not in Illinois, both the fees of this college and lower tuition fees in voice, piano, violin, or other stringed instrument, for two lessons a week 25.00

For one lesson a week 15.00

In harmony, counterpoint, fugue, etc. 9.00

A non-matriculated student, enrolled in this college, pays the fees of this college and the lower tuition fees named above.

Preparatory Courses

A student enrolled in this college pays the fees of this college and lower fees in voice, piano, violin, or other stringed instrument, any band instrument, and public school methods, for two lessons a week 15.00

For one lesson a week 8.50

Use of a piano for practice one hour a day, each semester.... 3.00

Additional hours at same rates.

AVERAGE ANNUAL EXPENSES

The following are for students attending at Urbana, estimated average annual expenses, *exclusive* of books, clothing, railroad fare, laboratory fees, if any, and small miscellaneous needs:

Semester fees\$ 24.00 to \$ 24.00

Room rent for each student (two in room) 45.00 to 72.00

Table board in boarding houses and clubs 135.00 to 162.00

Washing 18.00 to 24.00

Total\$222.00 to \$282.00

Board and room in private house, a week..... 5.00 to 7.00

In addition to the above, freshmen pay a matriculation fee of \$10.00, and the men are required to buy a cadet uniform, which costs \$15.00. Other necessary expenses will need to be taken into consideration. Six hundred and twenty-eight scholarships are of-

ferred each year. These cover the holder's incidental fees and the matriculation fee. For all the necessary expenses of the year, the average student is likely to need not less than \$350.00 to \$450.00.

BOARD

The University does not furnish board. There are a large number of suitable places in Urbana and Champaign, within easy walking distance of the University, where students can obtain table board and rooms. There are several students' clubs at which the cost of meals is three and a half to four dollars a week. The Young Men's and Young Women's Christian Associations of the University will aid new students in procuring rooms and boarding places.

ASSOCIATIONS, SOCIETIES, AND CLUBS

HOSPITAL ASSOCIATION

The Hospital Association is an organization of students to provide a fund for hospital care in case of sickness. The members of the association pay a small fee each semester and the fund thus raised is used to pay the hospital expenses of members who may need such care. The fund is under the control of a committee of the Council, and during the past ten years the association has rendered valuable aid to a considerable number of members. Students are advised to join the association.

LITERARY SOCIETIES

The ADELPHIC, IONIAN, and PHILOMATHEAN societies for men, and the ALETHENAI, ATHENEAN, and ILLIOLA for women, meet weekly, on Fridays, throughout term time.

RELIGIOUS SOCIETIES

Organizations of students of different religious denominations are maintained at the University, prominent among which are the Young Men's and Young Women's Christian Associations.

CLUBS AUXILIARY TO COURSES OF STUDY

The Chemical Club meets fortnightly and is open to all students in the chemical department. Its purpose is to foster a general interest in all subjects connected with the field of Chemistry.

The Classical Club, consisting of instructors and advanced students in Classics, meets monthly for papers, readings, and discussions.

The Commercial Club is composed of students in the courses of training for business. It meets on alternate Tuesday evenings to hear addresses from practical business men and to discuss commercial topics.

Le Cercle Français includes students who have had at least one year's work in French. The club meets twice a month throughout the year. Its proceedings are conducted in French, the object being to supplement the work of the class room by the practical handling and understanding of the language.

Der Deutsche Verein includes students who have pursued the study of German for two years, and others who have a speaking knowledge of the language. Its proceedings are conducted entirely in German; meetings are held twice a month, and programmes of a literary, conversational, and musical nature are presented.

The English Journal Club is an organization of the graduate students in English, holding monthly meetings for the analysis and discussion of important periodical publications in the field of English literature.

The History Club, consisting of instructors and advanced students, meets monthly.

The Household Science Club, which meets on alternate Wednesdays, is intended to foster general interest in household science, and its meetings are devoted to a discussion of topics relating to that subject.

The Komenian Society was organized in 1908 by the Bohemian students of the University. Its purpose is to promote the intellectual, social, and moral culture of those connected with it, along the lines of Czech language, literature, and thought in general. Meetings are held every other Saturday, with an alternation of literary sessions, dealing with the life of the Bohemian in this country, and seminar sessions devoted to a study of the Bohemian language and literature. Discourse in the Bohemian tongue is encouraged.

The Mask and Bauble is a Club which has for its purpose the presentation of a standard play.

The Mathematical Club is open for membership to the instructors and students of mathematics at the University. It meets once

in two weeks to discuss questions of interest in pure and applied mathematics.

The Oratorical Association is composed of students interested in public speaking. Membership may be secured upon application and the payment of a yearly fee. The Association manages an entertainment course, including the various debates and other contests, to which members are admitted free of charge.

The Pen and Brush Club was formed to promote the consistent study of the technical forms of art, and to crystallize the interest in drawing and painting. The members have a sketching class, and every month give a public lecture on some subject of interest to artists and art students. Twice a year a public exhibition is given, and every month the members have a private exhibition at which are displayed drawings submitted during the month. The club requires members in good standing to submit two drawings monthly. All upperclassmen proficient in drawing are eligible for membership.

The Philological Society, composed of instructors and advanced students in the various linguistic departments, holds monthly meetings for the discussion of papers of a literary or philological nature.

The Scandinavian Club was organized in 1900 for the purpose of bringing together all students having knowledge of at least one of the Scandinavian languages. Meetings are held during the academic year, at which are discussed subjects connected with the northern countries, and especially with their literature.

El Circulo Español is composed of Latin-American students and of native students interested in the Spanish language and literature. The proceedings of the club are conducted in Spanish. It offers a meeting ground for native and foreign students to exchange information concerning the commerce and literature of their respective countries. Meetings are held twice a month.

The Woman's League was organized to further the spirit of unity among the women of the University and to be a medium by which the social standards of the University can be made and kept high. Every woman in the University is, by virtue of her registration, a member of the League. The administrative power is vested in an Advisory Board and an Executive Committee composed of representatives of the various women's organizations. The league manages a loan fund, supports a room in the Burnham Hospital, and provides the magazines for the Woman's Building.

DESCRIPTION OF COURSES

ACCOUNTANCY

See Economics

ART AND DESIGN

The aim of the Department of Art and Design is to offer courses which will assist students to cultivate esthetic taste, and to equip those who wish to study art professionally for advanced work in the professional art schools at home or abroad.

Attention is also called to courses in esthetics offered by the departments of philosophy and education, and to related courses in household science and architecture.

1. **FREE HAND DRAWING.**—An elementary course offering, first, lectures on the principles of perspective followed by practice in drawing; and, secondly, work arranged to be of direct assistance to the students in particular departments of the University. For example, engineering students draw details of machinery; botanical students, plants and flowers; architectural students, casts of ornament. All students entering the department are required to enter this class or pass an examination in the subject. *I; (2 or 3); II; (3).*
Assistant Professor LAKE, Mr. KELLEY.

LIGHT AND SHADE.—Study of values in charcoal, pencil, or monochrome wash as a preparation for advanced work. *II; (2 or 3).*
Mr. KELLEY.

Prerequisite: Art and Design 2.

3. **DRAWING FROM THE ANTIQUE.**—Study of casts from the antique, including details of the face, masks, busts, and the figure. Study of artistic anatomy. This course aims to give students a sound knowledge of the principles of construction of the figure and prepare them for intelligent work from the life. The department has a large collection of casts from Greek, Roman, and Renaissance sculpture. *I, II; (3).*

Assistant Professor LAKE, Miss WETMORE.

Prerequisite: Art and Design 1.

4. **WATER COLOR PAINTING.**—Still-life and flowers in water color. The department owns a large and varied collection of still-life, containing examples of the pottery of all countries, and flowers may

be obtained from the University greenhouse at any season. *I, II; (3).*

Prerequisite: Art and Design 1 and 2.

5. OIL PAINTING.—Figure and portrait from life in costume. In addition to the technical study of the figure and portrait from life, this course includes a study of pictorial composition and illustration. *I, II; (3).*

Miss WETMORE.

Prerequisite: Art and Design 1, 2, and 3.

5a. OIL PAINTING.—Still-life and flowers. This course is a preparation for more advanced painting from landscape or figure. The class sketches in oil out of doors in the spring and fall when the weather is favorable. *I, II; (3).*

Miss WETMORE.

Prerequisite: Art and Design 1 and 2.

8. MODELING.—A course in clay modeling comprising work from the antique and from life in relief and the round. Instruction is given in casting. *I, II; (2).*

Assistant Professor LAKE.

8a. MODELING.—A special section of course 8 for the study of ornament by architectural students. *I; (2).*

Assistant Professor LAKE.

Prerequisite: Art and Design 1.

10. PEN AND PENCIL RENDERING.—In this course drawings are made with special reference to the requirements of the reproductive processes and commercial purposes. *I, II; (1).*

Assistant Professor LAKE.

Prerequisite: Art and Design 1.

12. THE THEORY AND PRACTICE OF DESIGN.—The laws of order with application of designs made to fabrics, leather, metal, glass, and ceramics. *I, II; (3).*

Mr. KELLEY.

Prerequisite: Art and Design 1.

16. COLOR.—The use of color in design and in interior decoration. *I; (2).* Architecture 41 will be substituted for this course during the present year.

Professor WELLS.

Prerequisite: Art and Design 1 and 3.

19. HISTORY OF THE FINE ARTS.—A course of illustrated lectures on the history of the Fine Arts. Three periods a week with required reading. *I; (3).*

Assistant Professor LAKE.

20. TEACHERS' CLASS.—In this class the principles of art study are applied to the special problems of the public school. Published

courses in art for the public schools are compared, and the class prepares a model course of study. *I, II; (2).*

Assistant Professor LAKE.

Prerequisite: Art and Design 1, 2, and 4.

ASTRONOMY

Students without mathematical training may elect course 1. Course 4 is for beginners, but requires trigonometry. Other courses should be taken in the order 3, 6, 15, 14, 7.

COURSES FOR UNDERGRADUATES

1. **ELEMENTARY ASTRONOMY.**—This is a course for beginners and does not require mathematics. From lectures and the text the student will be given a general view of the subject and this class room work will be supplemented by direct observation of the sky. Some simple work will be done with the instruments of the observatory, but emphasis will be laid on those observations which can be made without apparatus, and which the student can make in after life. *I; (3).* Assistant Professor STEBBINS, Dr. REED.

4. **GENERAL ASTRONOMY.**—A beginners' course, with more observational work than Astronomy 1. Two evenings per week are spent at the observatory *II; (5).* Dr. REED.

Prerequisite: Mathematics 4.

6. **PRACTICAL ASTRONOMY.**—This course is offered especially for engineers. Rough and accurate determination of latitude, azimuth, and time are essential parts of the course; and emphasis is laid on the methods which the engineer will use with the ordinary surveyor's transit. The necessary amount of spherical trigonometry is given at the beginning of the work. This course is also designed to train the student in the art of computing. Comstock's *Field Astronomy for Engineers.* *II; (2).* Assistant Professor STEBBINS.

Prerequisite: Mathematics 7 or 8a.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

7. **THEORETICAL ASTRONOMY.**—An introduction to celestial mechanics, including the theory of orbits, perturbations, and canonical transformations. *I, II; (3).* Dr. REED.

Prerequisite: Mathematics 8a or 7, 9.

9. CELESTIAL MECHANICS.—Properties of canonical systems of differential equations, integration by series, periodic and asymptotic solutions, integral invariants. *I, II; (3).* Dr. REED.

Prerequisite: Mathematics 16; Astronomy 7.

14. OBSERVATIONAL ASTRONOMY.—This course is intended for those who wish to become familiar with the working methods of an astronomical observatory. The problems set for solution are largely individual. *II; (3).* Assistant Professor STEBBINS.

Prerequisite: Astronomy 15.

15. GEODETIC ASTRONOMY.—Advanced work with the sextant, transit, and zenith telescope. The methods taught are similar to those of the United States Coast Survey. *I; (3).*

Prerequisite: Mathematics 7 or 8a.

Assistant Professor STEBBINS.

BACTERIOLOGY

See Botany 5, 6, 8.

BOTANY

The undergraduate work may be roughly classified in four somewhat distinctive lines, viz.: 1, anatomy and physiology (courses 1, 3, 7, 9, 14); 2, morphology and taxonomy (courses 2, 4, 13, 16); 3, ecology (courses 17, 18, 19, 20); 4, bacteriology (courses 5, 6, 8). Course 11 is an elementary one and 15 is for prospective teachers. Courses 1, 2, and 4 form together a general introduction to the science and may be elected by those who propose to go no farther or with equal propriety by those who are to pursue subsequently the more specialized work.

1. HISTOLOGY AND PHYSIOLOGY.—A study of the tissues and organs of plants and of the phenomena of nutrition, growth, and irritability. *II; (5).*

Assistant Professor HOTTES, Mr. PRICER, Miss BALDWIN, Mr. LEHENBAUER.

Prerequisite: Entrance credit in Botany or Botany 11, Chemistry 1 or Physics 2a.

2. MORPHOLOGY.—The general morphology and taxonomy of

plants presented from the standpoint of evolution, including a study of selected types. Occasional field excursions. *I*; (5).

Mr. ———

Prerequisite: Entrance credit in Botany, or Botany II.

In courses 1 and 2 taken together, either in the order of the numbers or the reverse, there is offered a general introduction to the science for those who desire to continue the study, and as a unified course for general students. Each semester's work is, however, independent, and may be separately credited.

3. CYTOLOGY AND PHYSIOLOGY.—Lectures, laboratory work, and assigned reading. The course extends through the year, but the work of each semester is credited separately under the designations of 3a and 3b. The first semester is devoted to cytology and histology, with special attention to technique; the second, to a study of the influences of external stimuli on growth and movement. *I, II*; (5). (See Course 14).

Assistant Professor HOTTES.

Prerequisite: Botany I.

4. TAXONOMY OF SPERMATOPHYTES.—Identification and classification of flowering plants, with especial reference to the flora of Illinois. Chief attention, in the laboratory, may be given to weeds, grasses, etc., of economic importance; for this, arrangements should be made in the preceding semester. Lectures, assigned reading, and laboratory work; field excursions until the close of the season. *I*; (5).

Mr. ———

Prerequisite: Entrance credit in botany, or Botany II.

5. BACTERIOLOGY.—General principles of the science, methods of procedure, and a study of selected forms. Lectures, recitations, and laboratory work. *I, II*; (5). (Course given in the first semester is repeated in the second).

Professor BURRILL, Assistant Professor MACNEAL, Mr. BRISCOE,
MISS LATZER.

Prerequisite: Chemistry I and one year's work in the University, including one semester in botany or zoology.

7. PLANT PATHOLOGY.—A study of the principal groups of parasitic fungi and plant diseases due to them, with methods of investigation and control. *I, II*; (5).

Professor BURRILL.

Prerequisite: Botany I, 2, and 4.

8. BACTERIOLOGY.—A detailed study of selected species of bac-

teria or investigations upon assigned subjects. *I or II; (2-5).*

Professor BURRILL.

Prerequisite: Botany 5.

9. CYTOLOGY AND PHYSIOLOGY, ADVANCED COURSE.—Special laboratory problems in certain phases of cytology and physiology. Students are required to meet for critical discussions of current literature and for reports on research work. *I, II; (2-5).*

Assistant Professor HOTTES.

Prerequisite: Two years' work in botany including Botany 3.

10. SEMINARY.—Reports and discussions upon assigned topics and results of research work. For advanced and graduate students. *I, II; (1).*

Professor BURRILL.

11. INTRODUCTORY COURSE.—Elementary work chiefly upon flowering plants, including their general structure and activities. The laboratory work is supplemented by field observations and textbook work. The course is planned to offer general students an opportunity of gaining elementary knowledge of the vegetable kingdom. *I; (5).*

Assistant Professor HOTTES, Mr. PRICER, Miss BALDWIN, Mr. LEHENBAUER.

13. FORESTRY.—A study of forest trees and their collective influences; the principles and practice of forestry; forestry legislation and economics. The same as Horticulture 9. *II; (2).*

Professor BURRILL.

Prerequisite: Botany 4 or 11.

14. HEREDITY AND ORIGIN OF SPECIES.—The plant cell; the physiology of its different constituents and the parts these play in the process of fertilization; various theories of heredity and of species formation. *I; (2).* The lectures of Course 3.

Assistant Professor HOTTES.

Prerequisite: One year's work in the University, including one semester in botany or zoology.

15. TEACHERS' COURSE.—A study of the teaching of botany in secondary schools; methods of instruction; laboratory equipment and material helps, pertinent literature; the teacher's preparation and duties. *II; (1).*

Professor BURRILL, Assistant Professor HOTTES.

Prerequisite: At least one year of botanical work in the University of the equivalent.

16. TAXONOMY OF SPECIAL GROUPS.—Mostly laboratory and her-

barium work, and assigned reading. The course extends through the year, but the work of each semester is credited separately under the designation of 16a and 16b. *I, II; (5).* Mr. _____

Prerequisite: Botany 4.

17. *ECOLOGY.*—Ecological factors which control the distribution of plants, principles of plant association, and characteristics of some typical plant formations. Lectures and, after the season opens, field work on Saturday forenoon. *II; (3).* Mr. _____

Prerequisite: Entrance credit in botany or Botany 11.

18. *ECOLOGY.*—Field and laboratory studies of selected areas, with assigned reading and lectures. The field work must be done wholly or in part during the preceding summer on an area approved by the instructor. *I, II, Summer Session; (2-5).* Mr. _____

Prerequisite: Botany 4 and 17.

19. *SEMINARY IN ECOLOGY.*—Reports and critical discussions of current literature and research work. *I, II; (1).* Mr. _____

Prerequisite: Open only to students who have done or are engaged in ecological field work.

20. *ECOLOGY AND TAXONOMY.*—Special problems upon individual assignments, dealing mainly with the plants of Illinois and vicinity. *I, II; (2-5).* Mr. _____

Prerequisite: Botany 18 or 16 as selected problems require.

CHEMISTRY

Students taking chemistry at the University are advised to give, if possible, at least one year to the subject and this should include Chemistry 1 or 1a, 2 and 3. Those continuing in the second year should take Chemistry 5a and 5b, 5c or 13a. In the third year there should be taken Chemistry 14 or 9, 9a, 9b, or 9c, 31 and 33. Along with these, more special courses may be taken if desired, but, in general, students are not advised to take the special courses unless they have had the fundamental work represented by the selection given above. Students who desire a training for professional work in chemistry, either as teachers or in its industrial applications, will naturally take the chemical course or the course in chemical engineering.

Students who find it impossible to take more than one semester's work are requested to register for Chemistry 1 or 1a in the second semester rather than the first.

1. INORGANIC CHEMISTRY.—This course deals with the general principles of the science. Alexander Smith's *General Inorganic Chemistry. I or II*; (5).

Professor NOYES, Dr. BALKE, Dr. SMITH, Dr. ISHAM, Dr. McCARTHY.

1a. INORGANIC CHEMISTRY.—A course in inorganic chemistry for students who have had one year of high school chemistry. The course includes class and laboratory work. *I or II*; (4).

Professor NOYES, Dr. BALKE, Dr. SMITH, Dr. ISHAM.

2. INORGANIC CHEMISTRY.—This course is a continuation of Chemistry 1 and is mainly devoted to a study of metallic elements, their classification, compounds, and chemical properties. The work is from lectures and assigned text. It must be accompanied by Chemistry 3. Alexander Smith's *General Inorganic Chemistry. II*; (2). Professor NOYES, Dr. BALKE, Dr. ISHAM, Dr. McCARTHY.

Prerequisite: Chemistry 1.

3. QUALITATIVE ANALYSIS.—This course consists of recitations and laboratory practice in the ordinary processes of qualitative analysis. It must be accompanied by Chemistry 2. *I or II*; (3).

Dr. SMITH, Dr. ISHAM, Dr. McCARTHY.

Prerequisite: Chemistry 1.

5a. ELEMENTARY QUANTITATIVE ANALYSIS.—The laboratory work comprises a series of experiments which illustrate the fundamental principles of gravimetric and volumetric methods. The lectures and recitations consist of a consideration of stoichiometrical relations, the fundamental laws of chemistry and their application to the study of solutions. Medical preparatory students are given special problems in the latter part of the course. *I*; (5).

Dr. BURGESS.

Prerequisite: Chemistry 2 and 3.

5b. QUANTITATIVE ANALYSIS.—Continuation of 5a. A comparative study of methods with practice in the analysis of silicates, metallic compounds, and alloys. Some work in advanced qualitative analysis will be given to students in the courses in chemistry and chemical engineering. Lectures; laboratory. *II*; (5).

Dr. BURGESS.

Prerequisite: Chemistry 5a.

5c. FOOD ANALYSIS.—This course includes the analysis of food stuffs, grain, milled products, alcoholic beverages, baking powders,

vinegars, syrups, sugars, etc. Students who have taken work amounting to five hours' credit in this course may arrange to do more advanced work along the following lines: (a) the study of methods of detecting food adulterations; (b) the separation and determination of the nitrogenous constituents of animal and vegetable foods; (c) the identification and estimation of the carbohydrate constituents of food products. *II*; (3-5). Dr. ———.

Prerequisite: Chemistry 5a or 13a, and 9 or 14.

6. CHEMICAL TECHNOLOGY.—This is a course of lectures comprising a study of technological chemistry as illustrated in those industries having a chemical basis for their principal operations and processes. Much use is made of the journals. Thorp's *Industrial Chemistry* is used as a guide. No laboratory work. *II*; (2).

Professor PARR.

Prerequisite: Chemistry 5a.

7. METALLURGY.—A general course in metallurgical processes. Lectures and assigned reading. *I*; (2). Professor PARR.

Prerequisite: Chemistry 5a.

8. IRON AND STEEL ANALYSIS.—Analyses are made of all the constituents by both rapid or technical, and standard methods. *II*; (3). Dr. BURGESS.

Prerequisite: Chemistry 5b.

9. ORGANIC CHEMISTRY.—For students of the medical preparatory course and others desiring a short course in this subject. The work consists in the discussion of the characteristics of the more typical and simple organic compounds, followed by a brief consideration of most of the important classes of derivatives of carbon. Remsen's *Organic Chemistry*. Must be accompanied by 9c. *II*; (3). Assistant Professor CURTISS.

Prerequisite: Chemistry 2 and 3.

9a. ORGANIC SYNTHESIS.—Laboratory work for students of the chemical course, in ultimate organic analysis and the preparation and study of typical organic compounds, to accompany Chemistry 14. *I*; (2). Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 2 and 3.

9b. ORGANIC SYNTHESIS AND ANALYSIS.—Continuation of 9a. To accompany Chemistry 14. *II*; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 9a.

9c. ORGANIC SYNTHESIS.—Laboratory work in organic chemistry for students of the medical preparatory course. Typical organic compounds are prepared and studied. Especial attention is directed to the organic substances of medicinal value and those of physiological importance. *II*; (2).

Assistant Professor CURTISS, Mr. DERICK.

Prerequisite: Chemistry 2 and 3.

10a. WATER ANALYSIS.—Lectures on history, sources, contamination, and standards of purity of potable waters and waters for industrial purposes, together with practice in analytical methods. *I*; (2).

Professor BARTOW.

11. RESEARCH.—In the senior year a special line of work is arranged for each individual, designed particularly to develop self-reliance and initiative in dealing with new problems or topics needing comparative study or review. A thesis must be prepared embodying a thorough review of the literature of the subject, together with an account of the work done in the laboratory. As far as possible the subject must be determined upon and reading begun in the junior year. A minimum of five semester hours is required. *I, II*; (5).

Professors NOYES, PARR, BARTOW, HAWK, Assistant Professor CURTISS, Dr. BALKE, Dr. WASHBURN, Dr. SMITH, Dr. ISHAM, Dr. JONES, Dr. JESSE, Dr. BURGESS, Dr. MCCARTHY.

14. ORGANIC CHEMISTRY.—This course consists of lectures and recitations upon the fundamental principles and more important compounds of organic chemistry. Noyes's *Organic Chemistry*. This course must be accompanied by Chemistry 9a and 9b. *I, II*; (3).

Professor NOYES.

Prerequisite: Chemistry 5a.

15. PHYSIOLOGICAL CHEMISTRY.—This course is designed especially for students desiring a fundamental knowledge of the principles of physiological chemistry. It will consist of lectures, demonstrations, conferences and practical work. The course will include a systematic study of enzymes, carbohydrates, salivary digestion, gastric digestion, fats, pancreatic digestion, intestinal digestion, bile, putrefaction products, feces, blood, milk, epithelial and connective tissue, muscular tissue, nervous tissue, and urine. The work on gastric juice, blood, urine, and milk will be both qualitative and quantitative, and all the clinical aspects of these

topics will be treated thoroughly for the benefit of prospective students of medicine. The course is open to graduates and undergraduates. Books used: Hammarsten's *Text Book of Physiological Chemistry*; Hawk's *Practical Physiological Chemistry*. I; (5).

Dr. HOWE.

Prerequisite: Two years' work in chemistry.

17. TEACHERS' COURSE.—A study of the methods which may be followed in teaching elementary chemistry. I; (1) Dr. BALKE.

18. SPECIAL COURSES.—Special courses as indicated below, consisting mainly of laboratory work, may be arranged for those competent to pursue them. From 1 to 10 hours credit will be allowed in the undergraduate courses for such work.

(a) Special problems in assaying and ore treatment. Free-milling chlorination and cyanide tests. Professor PARR.

(b) Advanced metallurgical chemistry. Professor PARR.

(c) Analysis and calorimetry of fuels. Professor PARR.

(d) Paints, oils, etc. Protective coverings for wood and iron. Professor PARR.

(e) Analysis of commercial fertilizers. Dr. ———.

21. PROXIMATE ORGANIC ANALYSIS.—A course of laboratory practice, for advanced students, in systematic methods for the identification of organic compounds and a study of organic mixtures as found in commercial articles. I; (2). Mr. DERICK.

Prerequisite: Chemistry 9b or 9c.

22. ANIMAL CHEMISTRY.—A course for the detailed study of the chemical composition of animal products and feeding stuffs. This is a combined classroom and laboratory course. I or II; (3-5).

Professor GRINDLEY.

Prerequisite: Two years' work in Chemistry.

27. QUALITATIVE ANALYSIS OF THE RARE ELEMENTS.—A detailed study of the rare elements and their compounds. The work consists mainly in the identification and separation of the elements and the study of the formation, solubilities, and chemical reactions of their salts. Reading is assigned in connection with laboratory work. II; (3). Dr. BALKE.

Prerequisite: Two years' work in Chemistry.

31. ELEMENTARY PHYSICAL CHEMISTRY.—This course is designed to present, in an elementary manner, some of the more important principles and methods of physical chemistry and electrochemistry. Instruction is by lectures and recitations. To secure familiarity in

applying the laws and principles of physical chemistry to practical problems in other branches of chemistry, the student is expected to solve numerous problems in connection with this course. Walker's *Introduction to Physical Chemistry*. II; (3). Dr. WASHBURN.

Prerequisite: Chemistry 1, 2, and 3; Physics 1 or 2a, and Mathematics 8a.

33. ELEMENTARY PHYSICAL CHEMISTRY.—A laboratory course to accompany course 31. The experiments performed will include the methods of determining molecular weight both in the gaseous state and in solution; the application of the principles relating to chemical equilibrium; the measurement of the electrical conductivity of solutions and the application of this property in interpreting the phenomena occurring within the solution; and the illustration of some of the fundamental conceptions of thermochemistry. II; (2).

Dr. WASHBURN, Dr. JONES.

Prerequisite: Chemistry 5a, Physics 2b or 3.

35. ELECTROCHEMISTRY.—Recitations or lectures and laboratory work dealing with the practical applications of electrochemistry in the industries; intended for students going into technical work. The study of patents is made an important feature of the course, each student being required to collect, study, and report upon the more important patents in some selected industry. Blount's *Practical Electrochemistry*. I; (3 or 5).

Dr. JONES.

Prerequisite: Chemistry 31 and 33.

61. INORGANIC PREPARATION.—A laboratory course in the preparation of chemical products from raw materials. The manufacture and testing of pure chemicals, fractionation, and other processes of the manufacturing chemist. II; (2).

Dr. JESSE.

Prerequisite: Chemistry 5a.

65. TECHNICAL GAS AND FUEL ANALYSIS.—Examination of gases, gas mixtures, flue gases, and fuels. Determination of calorific values and calculation of efficiencies. I; (2).

Professor PARR, Dr. JESSE.

Prerequisite: Chemistry 5a.

66. EXACT GAS ANALYSIS.—A laboratory and lecture course on the analysis of commonly occurring gaseous mixtures, involving the use of the Hempel apparatus, measuring gases under constant pressure and constant volume, and determination of the density of gases. II; (2).

Dr. ISHAM.

Prerequisite: Chemistry 5b.

69. ASSAYING.—The fire assay of lead, gold, and silver ores. Fluxes, reagents, and charges are studied in connection with various typical ores, and practice given in use of the crucible and muffle furnaces and in the manipulations connected with fire assaying. *I*; (2). Professor PARR, Dr. JESSE.

Prerequisite: Chemistry 5a; mineralogy.

93. JOURNAL MEETING.—For juniors, seniors, and graduates. *I, II*; (1). All members of the teaching staff in the Chemical Department. For Juniors, Dr. SMITH.
For Seniors, Dr. CURTISS.

THE CLASSICS

GREEK

COURSES FOR UNDERGRADUATES

Courses 1 to 4 inclusive are designed to meet the needs of students who cannot present Greek for entrance and yet wish to study the language.

1. BEGINNING GREEK, GRAMMAR AND READER.—Xenophon's *Anabasis* begun. *I, II*; (4). Dr. CANTER.

3. XENOPHON.—*Anabasis*, books II-IV. *I*; (4).

Associate Professor OLDFATHER.

Prerequisite: Greek 1.

4. HOMER—Six books of the *Iliad*. *II*; (4).

Associate Professor OLDFATHER.

Prerequisite: Greek 3.

5. HERODOTUS: THE LYRIC POETS.—*I*; (3).

Professor MOSS.

(Offered in 1910-1911; to be omitted in 1911-1912.)

Prerequisite: Greek 4.

6. THUCYDIDES. Books VI-VII. *II*; (3).

Assistant Professor PEASE.

(Offered in 1910-1911; to be omitted in 1911-1912.)

Prerequisite: Greek 5 or 7.

7. THE DRAMA.—*I*; (3).

Professor MOSS.

(Offered in 1910-1911; to be omitted in 1911-1912.)

Prerequisite: Greek 4.

8. PLATO.—Selected dialogues, including the *Apology* and *Phaedo*. *I*; (3). Assistant Professor PEASE.

(Omitted in 1910-1911; to be offered in 1911-1912.)

Prerequisite: Greek 5 or 7.

14. ADVANCED GREEK PROSE COMPOSITION.—*II*; (1).

Professor MOSS.

Prerequisite: Greek 6 or 8.

GREEK LIFE AND LITERATURE IN ENGLISH

(Courses 16-19 presuppose no knowledge of Greek and are open to all students except freshmen.)

16. THE PRIVATE AND PUBLIC LIFE OF THE GREEKS.—Lectures and prescribed readings. Photographs and slides will be used to supplement the lectures. *I*; (1). Professor MOSS.

17. GREEK POETRY IN TRANSLATIONS.—*I*; (2). Professor MOSS.

18. GREEK PROSE IN TRANSLATIONS.—*II*; (2). Professor MOSS.

19. GREEK DRAMA IN TRANSLATIONS.—*II*; (2). Professor MOSS.

20. HISTORY OF GREECE.—*I*; (3). Assistant Professor PEASE.

Prerequisite: One course in History or Classics.

This course is described by the Department of History as History 5.

COURSE FOR ADVANCED UNDERGRADUATES AND GRADUATES

21. BEGINNING GREEK.—Elementary Composition and Grammar; lectures on Greek Literature. *I, II*; (4). Professor MOSS.

COURSES FOR GRADUATES

103. PRINCIPLES OF COMPARATIVE GRAMMAR. *I*. Dr. CANTER.
(The same as Latin 101.)

104. HOMER AND THE HOMERIC QUESTION.—*I, II*.
Associate Professor OLDFATHER.
(Offered in 1910-1911; to be omitted in 1911-1912.)

105. PLATO AND ARISTOTLE.—*I, II*.
Associate Professor OLDFATHER.
(Omitted in 1910-1911; to be offered in 1911-1912.)

106. GREEK DRAMA.—*I, II*. Professor MOSS.
(Offered in 1910-1911; to be omitted in 1911-1912.)

107. GREEK ORATORY.—*I, II*. Professor MOSS.
(Omitted in 1910-1911; to be offered in 1911-1912.)

LATIN

FIRST-YEAR COURSES

1. PLINY AND VERGIL.—Selections from Pliny's *Letters* and the *Aeneid*. Students offering three entrance units in Latin may take this course. *I, II; (4)*. Assistant Professor PEASE and Dr. CANTER.

2. LIVY, PLAUTUS, AND TERENCE.—Selections from Livy; the *Captivi* of Plautus and the *Phormio* of Terence. Students offering four entrance units in Latin may take this course. *I, II; (4)*.

Professor BARTON.

SECOND-YEAR COURSES

3. SALLUST AND CICERO.—Selections from the *Jugurthan War*; *De Senectute*. *I; (3)*. Dr. CANTER.

Prerequisite: Latin 2.

4. CATULLUS AND CICERO.—Selections from the lyrics of Catullus and the *Odes* of Horace. Professor BARTON.

Prerequisite: Latin 2.

5. LATIN COMPOSITION.—An elementary course combining grammatical drill with practice in the simpler forms of expression. *I, II; (1)*. Dr. CANTER.

Prerequisite: Latin 1 or equivalent.

ROMAN LIFE AND LITERATURE IN ENGLISH

(Courses 12 and 13 presuppose no knowledge of Latin and are open to all students except freshmen.)

12. VERGIL AND HORACE IN ENGLISH TRANSLATIONS.—*I; (1)*.

Professor BARTON.

13. ROMAN LIFE.—The private life of the Romans will be the principal subject of study. Such topics as the family, amusements, education, morals, and society will be considered, and some attention given to the monuments. Photographs and slides will be used to supplement the lectures. *II; (1)*. Professor BARTON.

19. ROMAN HISTORY.—*II; (3)*.

Dr. CANTER.

Prerequisite: One course in History or Classics.

(This course is described by the Department of History as History 6.)

COURSES FOR ADVANCED UNDERGRADUATES

7. HORACE AND JUVENAL.—Selections from the *Satires* and *Epistles* of Horace; selected *Satires* of Juvenal. I; (3).

Associate Professor OLDFATHER.

Prerequisite: 12 hours' credit in Latin.

8. TACITUS.—The *Annals*. II; (3). Assistant Professor PEASE.

Prerequisite: 12 hours' credit in Latin.

9. TEACHERS' COURSE.—The purpose and methods of preparatory Latin instruction; the teacher's preparation. II; (1).

Professor BARTON.

Prerequisite: 18 hours' credit in Latin. A portion of this requirement will be waived in the case of those who have taught Latin.

10. LATIN COMPOSITION.—A study of the leading principles with imitation of assigned models. I; (2). Professor BARTON.

Prerequisite: 12 hours' credit in Latin, including Latin 5 or its equivalent.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

14. SENECA.—Selections from his essays, letters, and tragedies. I; (3). Professor BARTON.

Prerequisite: 18 hours' credit in Latin.

16. MARTIAL AND SUTONIUS.—Selections. II; (3).

Associate Professor OLDFATHER.

Prerequisite: 18 hours' credit in Latin.

COURSES FOR GRADUATES

101. PRINCIPLES OF COMPARATIVE GRAMMAR.—I. Dr. CANTER.
(The same as Greek 103.)

103. CICERO.—*De Natura Deorum and De Divinatione*. I.

Assistant Professor PEASE.

104. PALAEOGRAPHY.—I.

Assistant Professor PEASE.

105. SURVEY OF LATIN POETRY.—II.

Assistant Professor PEASE.

106. COMEDY.—I, II.

Associate Professor OLDFATHER.

107. EPIGRAPHY.—II.

Assistant Professor PEASE.

108. TACITUS.—The *Histories*. II.

Professor BARTON.

ECONOMICS

The department of economics includes general economics, economic history, finance, commerce, industry, railway administration, and accountancy.

Courses 7, 22, and 26, English Economic History, the Economic History of the United States, and Economic Resources, are open to freshmen without special prerequisites. Courses numbered 101 and above are open to graduate students only.

COURSES FOR UNDERGRADUATES

1. PRINCIPLES OF ECONOMICS.—A beginners' course in the underlying principles of the science. *I*; (5).

Professor KINLEY and others.

Prerequisite: At least thirty hours of University work.

2. PRINCIPLES OF ECONOMICS.—This course is offered only to junior and senior students of the colleges of science, engineering, and agriculture. Emphasis is laid on practical economics. Section A is open to science and engineering students only; Section C to agricultural students only. *I*; (2). Professor ROBINSON, Dr. THOMPSON. *II*; (2). Professor ROBINSON.

3. MONEY AND BANKING.—The history and theory of money, credit, and banking. *II*; (3).

Professor KINLEY.

Prerequisite: Economics 1.

4. FINANCIAL HISTORY OF THE UNITED STATES.—A study of colonial and federal finance, including currency, banking, tariff, and fiscal questions. *I*; (3).

Assistant Professor WESTON.

Prerequisite: Economics 3 and History 3.

(Not given in 1910-1911.)

5. PUBLIC FINANCE.—A study of public expenditures, financial administration, taxation, and public debts. *I, II*; (2).

Associate Professor BOGART.

Prerequisite: Economics 1, 3, and Political Science 1.

7. ENGLISH ECONOMIC HISTORY.—The industrial development of England is traced from the manorial system, through the period of the guilds, the commercial policy and expansion of the seventeenth and eighteenth centuries, and the industrial and manufacturing growth of the nineteenth century. Open to freshmen and sophomores only. *I*; (3).

Associate Professor BOGART.

8. THE MONEY MARKET.—An advanced study of dealings in

money and credit, the functions of money broker and banker, the concentration of financial dealings at such centers as New York and London, international payments and the determination of rates of foreign exchange, the seasonal demands for money, causes of fluctuation in rates of discount, monetary panics and crises, investments, and the financial aspects of dealings on the stock and produce exchanges. *II*; (2). Assistant Professor WESTON.

Prerequisite: Economics 9. (Not given in 1910-1911.)

9. BANKING.—This is a course in the study of practical banking with special reference to the United States. *I*; (2).

Mr. ———

Prerequisite: Economics 3 and senior standing.

10. CORPORATION MANAGEMENT AND FINANCE.—*I*; (3).

Professor ROBINSON.

Prerequisite: Economics 1 and 3.

11. INDUSTRIAL CONSOLIDATIONS.—The development of industrial consolidations; the growth of monopoly; monopoly prices, wages, interest, and profits; and the proposed plans for controlling trusts. *II*; (3).

Professor ROBINSON.

Prerequisite: Economics 10.

12. LABOR PROBLEMS.—The first semester is devoted to a study of present labor conditions and to remedies proposed other than trade unionism. Attention is given to such evils as unemployment, poverty, woman and child labor, and improper housing. Remedial plans such as profit sharing, co-operation, and labor legislation are considered. The second semester is given more especially to an examination of labor organizations. The history of trade unions, internal organization, restrictions as to membership, collective bargaining, limitation of output, objections to piece work, strikes, boycotts, and injunctions are studied. The course during the second semester is open only to those students who take the first semester's work. *I, II*; (3).

Dr. TOWLES.

Prerequisite: Economics 1 and 3.

13. ECONOMIC HISTORY OF EUROPE.—A comparative study of the economic history of France, Germany, and England since the period of the industrial revolution. *I*; (2).

Associate Professor BOGART.

Prerequisite: At least sixty hours of University work, including Economics 1 and 3 and History 1.

14. **ADVANCED ECONOMIC HISTORY OF THE UNITED STATES.**—The industrial development of the country will be studied, and special attention will be given to the relation between economic and political movements. *II*; (2). Associate Professor BOGART.

Prerequisite: Senior or graduate standing, including History 3.

16. **ECONOMIC PROBLEMS.**—Section A, consisting wholly of engineers, takes up the study of railway problems, taxation of corporations, and labor questions. Section C, composed of students from the College of Agriculture only, takes up special topics relating to agriculture. *II*; Sec. A (2); Sec. C (3).

Professor ROBINSON, Dr. THOMPSON.

Prerequisite: Economics 1 or 2.

18. **SENIOR SEMINARY.**—A course for investigation in economics, commerce, and industry and the preparation of theses. Business students and others making economics a major should take this course.

Professor ROBINSON.

21. **SOCIALISM AND SOCIAL REFORM.**—A study is made of the historically important socialistic theories, chief attention being given to the socialism of Karl Marx and the resulting social movements. *II*; (3).

Dr. TOWLES.

Prerequisite: Economics 1 and 3.

22. **THE ECONOMIC HISTORY OF THE UNITED STATES.**—Beginning with the explorations and settlements that led to the colonization of this continent, the growth of industry, agriculture, commerce, transportation, and labor is traced from the simple, isolated agricultural communities of the colonies to the complex industrial and commercial society of today. Open to freshmen and sophomores only. *II*; (3).

Associate Professor BOGART.

24. **STATISTICS.**—The following courses in statistics are given by the mathematical department.

MATH. 23a. AVERAGES AND THE MATHEMATICS OF INVESTMENT.—The meaning, use, and abuse of different kinds of averages. The relation of the theory of probability to averages, and the application of the elements of probability to annuities, insurance, and various branches of science. Such information relating to loans and investments as can be put into algebraic language, and are of interest to the general student. Many practical problems are given

in the valuation of investment securities. *II*; (3).

Assistant Professor RIETZ.

Prerequisite: Mathematics 2 and junior standing.

MATH. 31. ACTUARIAL THEORY.—A detailed study of the application of probability to life contingencies, the construction and graduation of mortality tables, the elements of fire insurance, and the calculation of premiums for various types of life and fire insurance. *I*; (3).

Assistant Professor RIETZ.

Prerequisite: Mathematics 8a, 23a, and, for students of economics, Economics 33.

MATH. 129. THEORY OF STATISTICS.—The general methods of statistical investigation, the application of the theory of probability to statistical data, the fitting of curves to observation, interpolation, the theory of errors, and the mathematical theory of variability and correlation, the application of principles developed to problems in economics and biology. *I, II*; (3). Assistant Professor RIETZ.

Prerequisite: Mathematics 8a.

26. ECONOMIC RESOURCES.—A study of the various natural and artificial conditions affecting commercial and industrial development, followed by a somewhat detailed consideration of the more important products and industries of different countries. Special emphasis is laid upon the extent and distribution of the resources and the industrial and commercial activities of the United States. It is advisable that students taking this course elect the courses in physical geography (Geology 14 and 8) at the same time. This is a one-semester course and may be taken either semester. *I or II*; (3).

Dr. LITMAN, Mr. MORTON.

28. DOMESTIC COMMERCE AND COMMERCIAL POLITICS.—The course deals with the principles and methods of buying and selling in internal trade, discussing the various forms of wholesale and retail trade organizations; department, mail-order, and co-operative stores; markets, fairs, auctions; stocks and produce exchanges; commercial competition; theory and practice of modern advertising; commercial travelers; mercantile credit, etc. *I*; (3).

Dr. LITMAN.

Prerequisite: Economics 1, 3, 7, 22, and 26.

29. FOREIGN COMMERCE AND COMMERCIAL POLITICS.—Problems arising in connection with international trade relations, and various attempts to solve them; changes in theories and in policies; economic systems (mercantile, free trade, protective); classes of cus-

toms tariffs; commercial treaties; institutions for furthering export trade (commercial museums and bureaus of information, sample houses, consular reports, etc.) *II*; (c). Dr. LITMAN.

Prerequisite: Economics 28.

30. **TARIFFS AND CUSTOMS REGULATIONS OF THE UNITED STATES.**—A study of the history of tariff legislation in the United States, followed by a discussion of the present tariff system; the organization and the work of the custom house; entry of goods; bonded warehouses, etc. *I*; (3). Dr. LITMAN.

Prerequisite: Economics 1 and 3. (Not given in 1910-1911).

31. **COMMERCIAL RELATIONS OF THE UNITED STATES.**—A study of the trade relations of the United States with foreign countries, a review of the problems confronting our manufacturers and exporters in connection with sales abroad; various methods and suggestions offered for the development of our foreign trade. *II*; (3). Dr. LITMAN.

Prerequisite: Economics 1, 3, 7, 22, 26, and six hours of modern history.

33. **ECONOMICS OF INSURANCE.**—The historical development of insurance, and an extended discussion of its economic aspects. The various forms of insurance—fire, accident, employment, and life—from the standpoint of internal organization and from that of social service. Rates, policies, investments, corporate management, accounting, public supervision, and insurance law. *I*; (2). Professor ROBINSON.

Prerequisite: Economics 1 and 3. (Not given in 1910-1911.)

35. **CONSULAR AND DIPLOMATIC SERVICE.**—The basis of this course is the consular and diplomatic relations of the United States, though a careful study is also made of the duties and functions of consuls in general, as well as of the foreign service of the leading commercial nations. *II*; (3). Dr. LITMAN.

Prerequisite: Economics 28, 29, or 30. (Not given in 1910-1911.)

36. **ORGANIZATION OF OCEAN COMMERCE.**—The course considers the most important trade routes of the world; charter and line traffic; passenger and freight rates; governmental supervision and control of shipping; modern harbor facilities, etc. *II*; (3). Dr. LITMAN.

Prerequisite: Economics 28 and 29. (Not given in 1910-1911.)

41. **RAILWAY HISTORY AND ORGANIZATION.**—A history of the

railway development of the United States, prefaced by a description of transportation conditions prior to the introduction of the steam railway. Growth of network, financial policy, traffic and operating developments are all treated in some detail, and the course concludes with a study of modern railway organization. *I*; (3).

Professor DEWSNUP.

Prerequisite: Economics I and 3; for senior engineers, Economics 2.

42. RAILWAY ADMINISTRATION.—This course deals in detail with (1) railway finance and taxation, (2) theory of rates, and (3) state administration in the United States and abroad. *II*; (3).

Professor DEWSNUP.

Prerequisite: Economics 41.

43. TRAFFIC ADMINISTRATION.—The work of the freight and passenger traffic departments is treated with reference to general problems, classification of business, stimulation of business by advertising and other means, necessary forms and reports, special traffic, claims, classifications, and tariffs, interrelation of railways in traffic matters. *I*; (3).

Professor DEWSNUP.

Prerequisite: Economics I and 3; for senior engineers, 2; current registration or previous credit in 41. (Not given in 1910-1911.)

44. RAILWAY TRANSPORTATION.—The train service, train despatching, and the block system of train working will be emphasized. In connection with this, the subject of train speed and train accidents will be given some attention. The handling of the passenger service and some study of passenger terminal facilities will be included in the course. *II*; (3).

Professor DEWSNUP.

Prerequisite: Economics I and 3; for senior engineers, 2; current registration or previous credit in 42. (Not given in 1910-1911.)

45. RAILWAY PRACTICE.—A careful study of the design of team tracks, freight houses, and yards, with reference to economy and expedition of operation; methods of operation; fast freight service; car service and demurrage arrangements *I*; (3).

Professor DEWSNUP.

Prerequisite: Economics I and 3; for senior engineers, 2; current registration or previous credit in 41.

47. FOREIGN RAILWAY SYSTEMS.—A study of leading foreign railway systems. Organization, methods of operation, and political and other relations will be detailed. *II*; (3).

Professor DEWSNUP.

Prerequisite: Economics 42.

COMMERCIAL LAW (Law B).—The work covers the chief principles underlying the law of contracts, negotiable instruments, agency, partnerships, business corporations, sales of personal property, bailments and carriers, guaranty and suretyship, and insurance. *II; (4).* Mr. ———

Prerequisite: At least 60 hours of University credit, including Economics 1 or 2 and Accountancy 1.

COURSES FOR GRADUATES

101. ECONOMIC THEORY.—*I, II; Twice a week.*

Professor KINLEY.

103. SEMINARY IN RAILWAY ADMINISTRATION.—Advanced students in this subject make an investigation of some aspect of railway administration. *I, II.*

Professor DEWSNUP.

104. SEMINARY IN COMMERCE.—A study of present international commercial relations, with special reference to the trade conditions of the United States and the extension of her trade in foreign markets. *I, II.*

Dr. LITMAN.

106. RAILWAY POLICY.—A study of various railway policies and problems in the United States and abroad. *I, II; Once a week.*

Professor DEWSNUP.

107. THE CORPORATION IN ECONOMIC EVOLUTION.—*I, II; Once a week.*

Professor ROBINSON.

108. COMPARATIVE CORPORATION ORGANIZATION.—*I, II; Once a week* (Not given in 1910-1911.)

Professor ROBINSON.

118. SEMINARY.—The special subject of study for 1910-1911 will be announced in due course. *I, II.* Professor KINLEY and others.

120. HISTORY OF ECONOMIC THOUGHT.—*I, II; Twice a week.*

Dr. THOMPSON.

ACCOUNTANCY

1. PRINCIPLES OF ACCOUNTING.—This course is the foundation of all work in accounting. The student is made familiar with the keeping of accounts of various kinds of business, mercantile, industrial, and financial; the accounting for various types of business organizations; the methods of preparing the industrial and commercial statistics of a plant, for the purpose of making proper deductions as to the efficiency of departments, and the soundness of business policy. *I, II; (2).* *If elected this course must be taken through the year in order to secure credit.* Mr. ———

Prerequisite: Thirty hours of University credit, registration in Economics 1, and entrance credit in bookkeeping, or its equivalent.

2. COST ACCOUNTING.—The scope of cost accounting, the relationship of the various elements of cost to each other, and the methods of recording the same for various types of industries. The designing and installing of cost systems for typical industries. The course may be taken simultaneously with course 1. *II; (2).*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 1. (Not given in 1910-1911.)

3. INDUSTRIAL ACCOUNTING.—A study of the various types of industries, the methods of installing accounting systems to suit their technical peculiarities, for the purpose of revealing efficiency in management; the handling of departmental accounts. This course may be taken simultaneously with course 1. *I; (2).*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 1.

4. ADVANCED ACCOUNTING.—*Theory:* This part of the course includes the consideration of the handling of capital, revenue, dissolution of partnership, realization, liquidation, insolvency, good-will, treatment of bad debts, suspense, maintenance, depreciation, reserve and sinking funds, contingent funds, secret reserves, and the like.

Practical Accounting: The second part of the course includes the working out of accounting problems, applying the principles covered in the theoretical part of the course, the analysis of reports of railway, financial, and industrial corporations. *The course, if elected, must be taken through the year.. I, II; (3).*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 1, and registration in either the two-year or the four-year course in accountancy or railway traffic and accounting. *The course is not open to students in other courses except by permission of the instructor, the director of the school, and the dean of the college.*

5. AUDITING.—Discussion of the duties and responsibilities of an auditor, the kinds of audits that can be made, the value of each, the auditor's report, what it should contain, his certificate, its value, the preparation of audit reports. *For students in accountancy only. II; (2).*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 4; or 1 and registration in Accountancy 4.

6. TRUSTEE AND RAILROAD ACCOUNTING.—Discussion of the rights and duties of executors and trustees, proper accounting methods for each; railroad accounting, the handling of railroad revenue accounts, including freight, passenger, express, and other earnings from the road and allied companies, the treatment of operating expenses, fixed charges, the work of the Interstate Commerce Commission in standardizing railway accounting methods. *I; (2). For students of accounting and railway traffic and accounting only.*

Assistant Professor DUNCAN.

Prerequisite: Accountancy 4, or 1 and registration in 4. (Not given in 1910-1911.)

10. SHOP MANAGEMENT AND COST KEEPING.—The course considers the various types of industries, how they influence plant layouts, the laborers needed, and the materials used. A discussion is made of the best types of records suitable for each kind of industry in order to approximate costs of manufacture and to determine and compare the efficiencies of departments, of individual workers, of methods of production and the like. The work is presented from the standpoint of the engineer and shop manager. *II; (2).*

Assistant Professor DUNCAN.

Prerequisite: Open only to Engineering students who have had Economics 1 or 2.

EDUCATION

The courses of the department fall into two general divisions: Courses primarily for professional training, and courses more specifically designed for general culture. The first division includes courses 1, 3, 4, 5, 6, 10, 11, 14, 15, 101; the second division, courses 2, 9, 13, 16, 17, 18. Students majoring in education will be required to take a minimum of three hours in philosophy and three hours in psychology. They are specially advised to take courses 3 and 4 in philosophy, and courses 1 and 5 in psychology. Graduate students who are taking their major work in education must have had as a prerequisite for such study, Education 1 and 2, and at least one elementary course in psychology and one in philosophy. No student who has not at least junior standing will be allowed to

elect courses in education. The University does not grant a certificate which exempts candidates from the examinations for teachers' licenses in the State. Students desiring to prepare for the State-certificate examinations, given by the Superintendent of Public Instruction, will do well to take courses 1, 2, and 6.

INTRODUCTORY COURSES

1. PRINCIPLES OF EDUCATION.—This forms the groundwork for subsequent courses. The various processes involved in education are traced back to the basic principles of biology, psychology, and sociology which explain and justify them. *I*; (5).

Professor BAGLEY.

Prerequisite: At least two years of university work.

2. HISTORY OF EDUCATION.—The development of educational theory and practice in their relation to the history of civilization. *II*; (5).

Assistant Professor ANDERSON.

Prerequisite: At least two years of university work.

INTERMEDIATE COURSES

3. GENERAL METHOD.—The application of the principles of education, psychology, and logic to the art of teaching. *II*; (3).

Dr. NORTON.

Prerequisite: Education 1.

6. PRINCIPLES OF SECONDARY EDUCATION.—High school organization and management. A discussion of the essential elements of a high school, together with a consideration of the conditions existing in Illinois. Especial attention is given to the educational values of the studies represented in the secondary curriculum, to the structure of the course of study, and to the technique of secondary teaching and management. *II*; (3).

Professor BAGLEY, Assistant Professor HOLLISTER, and special lecturers.

Prerequisite: Education 1.

10. OBSERVATION.—This course involves (a) the systematic observation of classroom work in the Academy of the University and in the neighboring high schools; (b) weekly conferences for the discussion of observations; (c) one lecture each week upon the technique of teaching. *I or II*; (2).

Professor BAGLEY, Dr. NORTON.

Prerequisite: Education 1.

11. PRACTICE TEACHING.—The student teaches a class of secondary grade during the entire semester, ranking during this time as an assistant in the Academy. Open only to seniors. Application must be made the preceding semester. *I or II; (5 or 10).*

Professor BAGLEY, Dr. NORTON.

Prerequisite: Education 1, and either Education 3 or Education 10.

14. SCHOOL LAW.—A study of the development and present condition of school legislation in the United States. The school laws of Illinois are studied in especial detail. *I; (2).* Dr. NORTON.

Prerequisite: Education 1.

15. SCHOOL HYGIENE.—The hygienic aspects of school architecture and equipment; the hygiene of posture, exercise, and fatigue and of reading and writing; the bearing of hygienic principles upon the course of study, the daily program, and other details of administration and teaching. *II; (3).*

Dr. NORTON.

Prerequisite: At least five hours in Education.

16. SOCIAL PHASES OF EDUCATION.—The school as a social factor and its relation to the home, the church, and the State; the relation of education to child labor, vocation, and crime; educational extension. *II; (3).*

Dr. NORTON.

Prerequisite: At least five hours in Education.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

4. CONTEMPORARY EDUCATIONAL CONDITIONS AND MOVEMENTS IN THE UNITED STATES.—The interpretation of present tendencies as exemplified in the school systems of typical cities and states and in recent educational experiments in administration, discipline, methods, and subject matter. *I; (2).*

Dr. NORTON.

Prerequisite: Education, 1 and 2.

5. COMPARATIVE STUDY OF THE SECONDARY SCHOOLS OF FRANCE, GERMANY, ENGLAND, AND THE UNITED STATES.—The different types of secondary schools in each country; conditions of their origin and development; their present status and relation to elementary schools and universities. *II; (2).*

Dr. NORTON.

Prerequisite: Education 1 and 2.

13. EDUCATIONAL CLASSICS.—A critical study of the sources of the history of education. The more important educational works of Plato, Aristotle, Quintilian, Montaigne, Milton, Locke, Rousseau,

Pestalozzi, Herbart, Froebel, Spencer, and others are considered. *I; (3).* Assistant Professor ANDERSON.

Prerequisite: Education 2.

17. HERBART AND FROEBEL.—The philosophy, psychology, and pedagogy of Herbart and Froebel are critically studied and compared with other pedagogical systems. *I; (3).*

Assistant Professor ANDERSON.

Prerequisite: Education 1 and 2.

18. PRINCIPLES OF ESTHETIC, MORAL, AND RELIGIOUS EDUCATION.—Values, ideals, and methods of each; their relation to each other, to intellectual training, and to the utilities of life; their effects on social and national life and on the general advancement of the fine arts; selection of the material of instruction, and the development of individual taste and conscience; the public school, the Sunday school, and other instrumentalities. *I; (3).* Dr. NORTON.

Prerequisite: Education 2 and Psychology 7.

9. HISTORY OF INDUSTRIAL AND VOCATIONAL EDUCATION.—Industry and industrial training in Egypt, Greece, and Rome; industry and industrial training in the Middle Ages; the industrial revolution and its effect upon education; recent tendencies in the development of agricultural and industrial high schools, agricultural colleges, monotecnical schools, continuation schools, etc. *II; (2).*

Assistant Professor ANDERSON.

Prerequisite: Education 1 and 2 or their equivalents.

20a. THEORY OF SUPERVISION.—A study of the problems of supervision, with especial reference to the supervisors' functions in training and improving teachers. Open only to graduate students, to seniors who are either graduates of normal schools or experienced teachers, and to seniors who are preparing for the work of supervision in special subjects, such as household science, manual training, and physical training. *II; (3).* Professor BAGLEY.

Prerequisite: Education 1, 6.

20b. THEORY AND PRACTICE OF SCHOOL SUPERVISION.—Course 20a with the addition of a period of actual practice in the constructive criticism of teaching. *II; (5).* Professor BAGLEY.

Prerequisite: Education 1, 6.

23. AGRICULTURAL EDUCATION.—The place of nature-study and agriculture in the elementary and secondary school; the organization of courses and the principles and methods of teaching; litera-

ture. Observation of elementary and secondary classes. *II*; (3).

Assistant Professor CHARLES.

Prerequisite: Education I and Zoology 10, Botany 11, or the equivalent.

COURSES FOR GRADUATES

101. SEMINARY IN EDUCATION.—Hours and credits to be arranged.

Professor BAGLEY, Assistant Professor ANDERSON, Dr. NORTON.

111. PRACTICE TEACHING.—This course is based upon Education 11. Each graduate student taking this course must select, with the approval of the department of Education, some problem of teaching upon which there is a division of opinion among educators, plan means for investigating this problem, and present a written report of his methods and results before the close of the term.

Professor BAGLEY, Dr. NORTON.

ENGLISH

ENGLISH LANGUAGE AND LITERATURE

(Unless otherwise specified, the second semester of courses running through the year may not be taken without the first, nor may credit ordinarily be secured for a single semester's work in such courses.)

ELEMENTARY COURSES

English I may not be counted toward a major, and of the other courses in this group, only thirteen hours may be so counted.

1. INTRODUCTORY COURSE.—English Literature before the Nineteenth Century. *I*; (4). Assistant Professor BALDWIN and others.

Prerequisite: The minimum entrance requirements in English literature and English composition.

At least one section of this course will be repeated in the second semester. Juniors and seniors in the College of Literature and Arts taking the course will receive only half credit for it.

2. INTRODUCTORY COURSE.—English Literature of the Nineteenth Century. *II*; (4). Assistant Professor BALDWIN and others.

Prerequisite: English I.

Juniors and seniors in the College of Literature and Arts taking this course will receive only half credit for it.

16. AMERICAN LITERATURE.—*I, II; (3).*

Assistant Professor PAUL, Mr. SEARS.

Prerequisite: English 1 and 2.

33. ENGLISH LITERATURE FROM 1798 TO 1837.—*I, II; (3).*

Dr. ZEITLIN.

Prerequisite: English 1 and 2.

The first semester will be devoted to the poetry of the period; the second to the prose. Either semester may be taken without the other.

23. ELEMENTARY COURSE IN SHAKESPEARE.—Introductory to English 5. *II; (3).* Associate Professor SHERMAN, Assistant Professor PAUL.

Prerequisite: English 1 and 2.

19. LITERARY STUDY OF THE BIBLE.—In the first semester the *Psalms* and the *Prophets* (lyric poetry and oratory) are studied; in the second semester, *Proverbs*, *Ecclesiastes*, and *Job* (literature of wisdom). *I, II; (3).*

Assistant Professor BALDWIN.

Prerequisite: Eight hours of English literature. Only seniors or juniors will ordinarily be admitted to English 19.

INTERMEDIATE COURSES

29. ENGLISH LITERATURE FROM 1557 TO 1688, EXCLUSIVE OF THE DRAMA *I; (3).*

Assistant Professor BALDWIN.

Prerequisite: Eleven hours of English literature.

31. ENGLISH LITERATURE FROM 1688 TO 1789.—*II; (3).*

Assistant Professor PAUL.

Prerequisite: Eleven hours of English literature.

24. ENGLISH LITERATURE OF THE VICTORIAN PERIOD.—The first semester will be devoted to the poetry of the period; the second semester to the prose. Either semester may be taken without the other. *I, II; (3).*

Miss KYLE.

Prerequisite: Fourteen hours of English literature.

36. CONTEMPORARY WRITERS.—A study of prose fiction and the essay in England and the United States during the present generation. Special attention will be paid to periodicals. *I; (3).*

Professor DODGE.

Prerequisite: Fourteen hours of English literature.

(Not given in 1910-1911.)

35. THE DRAMA FROM 1600 TO 1900.—Either semester may be taken without the other. *I, II; (3).*

.. Associate Professor SHERMAN, Mr. GUILD.

Prerequisite: Fourteen hours of English literature, which must include English 23.

ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

5. SHAKESPEARE AND HIS PREDECESSORS.—The second semester, which will be devoted to Shakespeare, may be taken without the first. *I, II; (3).*

Professor DODGE.

Prerequisite: Seventeen hours of English literature, which must include English 23.

7. CHAUCER.—*I, II; (3).*

Dr. JONES.

Prerequisite: Seventeen hours of English literature.

4. THE HISTORY AND PRINCIPLES OF ENGLISH VERSIFICATION.—Theory of English metre and rhythm; history of the development of the forms of English verse. *II; (2).*

Mr. SCOTT.

Prerequisite: Seventeen hours of English literature.

(Not given in 1910-1911.)

11. THE PRINCIPLES OF CRITICISM.—A discussion of some of the more notable theories of art, the nature and elements of literature, and the meaning and purpose of criticism. *I; (3).*

Associate Professor FULTON.

Prerequisite: Seventeen hours of English literature. Students who take English 11 are advised to take either before or with it Philosophy 7 (Esthetics).

(Not given in 1910-11.)

6. THE HISTORY OF ENGLISH LITERARY CRITICISM.—A brief discussion of the leading critical principles laid down by Aristotle, Horace, and Longinus will preface the main work of the course. *I, II; (3).*

Associate Professor FULTON.

Prerequisite: Seventeen hours of English literature.

17. THE HISTORY OF THE ENGLISH LANGUAGE.—*I, II; (3).*

Associate Professor FULTON.

Prerequisite: Seventeen hours of English literature, or eleven hours of English literature and eight hours of French, German, or Latin.

8. OLD ENGLISH.—(Anglo-Saxon).—Grammar, prose, short poems, the first half of *Beowulf*. *I, II; (3).* Professor DODGE.

Prerequisite: Seventeen hours of English literature, or eleven hours of English literature and eight hours of German.

15. TEACHERS' COURSE.—Methods of teaching English literature and composition in the high school. *I, II; (3).*

Assistant Professor PAUL and others.

Prerequisite: Seventeen hours of English literature and nine hours of rhetoric.

COURSES FOR GRADUATES

101. RESEARCH IN SPECIAL PERIODS.—Competent graduate students are encouraged to seek the advice and assistance of the Department of English and to submit to the Department plans for study in the language or literature of the periods mentioned below.

A. Anglo-Saxon Language and Literature. Professor DODGE.

B. Thirteenth and Fourteenth Centuries. Dr. JONES.

C. Sixteenth Century.

Professor DODGE, Associate Professor SHERMAN.

D. Seventeenth Century. Assistant Professor BALDWIN.

E. Eighteenth Century.

F. Nineteenth Century.

Associate Professor FULTON, Associate Professor SHERMAN.

Prerequisite: The consent of the Department of English.

103. THE POETRY OF MILTON.—*Twice a week; II.*

Assistant Professor BALDWIN.

Prerequisite: Twenty hours of English literature. Students are advised to take English 29 before taking English 103.

109. GERMAN AND SCANDINAVIAN INFLUENCES ON ENGLISH LITERATURE OF THE EIGHTEENTH AND NINETEENTH CENTURIES.—*Twice a week; I, II.*

Professor DODGE.

Prerequisite: Eighteen hours of English literature and two years of German. Scandinavian 12 must be taken either before or at the same time as this course.

110. ANGLO-SAXON POETRY.—*Twice a week; I, II.*

Professor DODGE.

Prerequisite: English 8.

112. THE HISTORY AND PRINCIPLES OF ENGLISH GRAMMAR.—*Twice a week; I, II.*

Dr. ZEITLIN.

Prerequisite: English 8.

(Not given in 1910-11.)

113. ENGLISH PROSE SYNTAX.—An historical study of the forces (Old English, Old French, Latin) at work in the development of the English sentence, and an analysis of the style of important prose writers from the syntactical point of view. *Twice a week; I, II.* Dr. ZEITLIN.

Prerequisite: English 8.

126. ENGLISH BALLADS AND METRICAL ROMANCES.—*Twice a week; I, II.* Dr. JONES.

Prerequisite: Twenty hours of English literature. Students who elect English 126 are advised to take either with or before it English 7 (Chaucer) and Romance Languages 102 (Old French).

127. MIDDLE ENGLISH.—Critical Reading of Middle English texts. *Twice a week. I, II.* Dr. JONES.

Prerequisite: English 8.

(Of courses 126 and 127 only one will be given in 1910-1911.)

136. THE TRANSITION FROM THE SEVENTEENTH TO THE EIGHTEENTH CENTURY IN ENGLISH LITERATURE.—*I, II; (3).*

Assistant Professor PAUL.

Prerequisite: Twenty hours of English literature.

137. NINETEENTH CENTURY PROSE WRITERS.—*Twice a week; I, II.* Associate Professor SHERMAN.

Prerequisite: Twenty hours of English literature.

(Not given in 1910-11.)

The attention of students who wish to take English 137 is called to Philosophy 4 (Modern Philosophy), Philosophy 10 (The Philosophic Thought of the Nineteenth Century), and History 20 (Europe in the Nineteenth Century). With the consent of the instructor these courses may be counted toward the fulfilment of the prerequisite.

138. THE ROMANTIC MOVEMENT IN ENGLAND.—*Twice a week; I, II.* Associate Professor SHERMAN.

Prerequisite: Twenty hours of English literature and a reading knowledge of either French or German.

The attention of students who wish to take English 138 is called to History 7 (The Revolutionary and Napoleonic Era). With the consent of the instructor this course may be counted toward the fulfilment of the prerequisite.

139. THE HISTORY OF ENGLISH POETRY.—*Twice a week; I, II.* Associate Professor SHERMAN.

Prerequisite: Twenty hours of English literature and a reading knowledge of French.

RHETORIC

(Unless otherwise specified, the second semester of courses running through the year may not be taken without the first, nor may credit ordinarily be secured for a single semester's work in such courses.)

ELEMENTARY COURSES

Of the courses in this group only 2 and 3 may be counted toward a major.

1. RHETORIC AND THEMES.—Required for students in the Colleges of Literature and Arts, Science, Engineering, and Agriculture. *I, II; (3).* Mr. SCOTT and others.

Prerequisite: The minimum entrance requirements in English literature and English composition.

For the benefit of those whose course is irregular, a limited number of sections in each semester will take up the work of the other semester.

2. ARGUMENTATION.—A course in general argumentative writing based upon a study of the purpose of argument, and the tests of evidence and reasoning. Text-book, class discussions and assigned work. *II; (3).* Mr. HALLIDAY.

Prerequisite: Rhetoric 1.

3. DAILY THEMES.—Five short themes a week with a five-page theme every fortnight. Only one semester of this work may be taken. *I or II; (4).* Miss KYLE

Prerequisite: Rhetoric 1.

10. BUSINESS WRITING.—Business correspondence with practice in incidental writing, summaries, etc. Open only to those taking a business course, unless with the consent of the instructor. *II; (2).* Professor CLARK.

Prerequisite: Rhetoric 1.

11. COMPOSITION AND LITERATURE.—For students in the College of Engineering who elect English as their language. The course will be about equally divided between composition and English prose literature. *II; (4).* Professor CLARK.

Prerequisite: The minimum entrance requirements in English literature and English composition.

INTERMEDIATE COURSES

20. **ENGLISH COMPOSITION.**—The purpose of this course is to give students the opportunity to organize and write long themes. It may not be taken at the same time with Rhetoric 3. The second semester may be taken without the first. *I, II; (3).*

Professor CLARK.

Prerequisite: Rhetoric 1 and eleven hours of English literature.

16. **EXPOSITION.**—A study of the principles underlying the expository method; analysis of masterpieces of exposition, both literary and scientific; themes. *I; (3).*

Associate Professor FULTON.

Prerequisite: Two years of college work which must include Rhetoric 1.

12. **NEWSPAPER WRITING.**—Lectures, discussions, assignments in news writing, interviewing and reporting, study of news form, news value; typography, proof reading, etc. In the second semester one section is organized to study the management of agricultural papers and to give practice in preparing material for the agricultural press. *I, II; (2).*

Mr. SCOTT.

Prerequisite: Rhetoric 1 and either Rhetoric 3 or one semester of Rhetoric 20.

15. **ADVANCED NEWSPAPER WRITING.**—In the first semester this course presents larger problems in reporting than those in Course 12, including the collecting and arranging of scattered news facts for purposes of generalization. In the second semester an effort is made to cultivate the student's ability to apply the principles of history, economics, political science, etc., to public events. Copy reading, head writing, editing, and editorial writing are studied and practiced. *I, II; (3).*

Mr. SCOTT.

Prerequisite: Rhetoric 12 or some experience in reporting.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

6. **THE THEORY AND PRACTICE OF SHORT STORY WRITING.**—The second semester may be taken without the first. *I, II; (3).*

Mr. —————.

Prerequisite: Nine hours of Rhetoric which must include Rhetoric 3 or one semester of Rhetoric 20, and fourteen hours of English literature.

17. ENGLISH COMPOSITION.—II; (3). Associate Professor SHERMAN.

Prerequisite: Nine hours of rhetoric which must include Rhetoric 3 or one semester of Rhetoric 20, and seventeen hours of English literature.

(Not given in 1910-11.)

PUBLIC SPEAKING

(Unless otherwise specified, the second semester of courses running through the year may not be taken without the first, nor may credit ordinarily be secured for a single semester's work in such courses.)

ELEMENTARY COURSES

Only one of these courses may be counted toward a major.

7. PUBLIC SPEAKING.—Reading aloud, with occasional memory work; lectures, class exercises, and private instruction. *I, II; (2).*

Men's sections, Mr. HALLIDAY, Mr. PEARCE; women's sections, Miss LANDEE.

Prerequisite: The minimum entrance requirements in English literature and English composition.

13. INTERCOLLEGIATE DEBATING.—A study of the propositions to be discussed in the four intercollegiate debates. Those who wish to take part in the debates and get credit for their work must register for this course. *I, II; (2).* Mr. PEARCE.

Prerequisite: The minimum entrance requirements in English literature and English composition.

INTERMEDIATE COURSES

4. THE ART OF DEBATE.—Brief writing and the extemporaneous presentation of argument in formal debate. *I, II; (2).*

Mr. HALLIDAY.

Prerequisite: Rhetoric 1 and 7. It is desirable also that Rhetoric 2 should precede this course.

5. EXTEMPORE SPEAKING.—Discussion of current events, prac-

tice in after-dinner speaking, drill in parliamentary procedure, etc. *I, II; (2).* Mr. HALLIDAY.

Prerequisite: Rhetoric I and 7.

14. ORATORICAL COMPOSITION AND DELIVERY.—A study of the principles underlying effective discourse; text-book and discussions. Those who intend to enter the oratorical contests should take this course. *I; (3).* Mr. PEARCE.

Prerequisite: Rhetoric I and 7.

8. INTERPRETATIVE READING.—The vocal interpretation of literature. *I; (3).* Mr. GUILD.

Prerequisite: Rhetoric 7.

9. DRAMATIC READING.—The study and presentation of a classic play or of special scenes. *II; (1-4).* Mr. GUILD.

Prerequisite: One year of college work and the consent of the instructor.

GEOLOGY

The department offers three lines of work, and recommends that the courses be usually taken in the order indicated below.

(a) Mineralogy, Petrography, Economic Geology.—For those who care particularly for minerals and rocks, their identification, origin, and transformations; the origin, characteristics, and classification of ores and the economic qualities of non-metallic minerals, it is recommended that the following courses be taken in the order given: Geology 19, 1, 1a, 5, 6, 7, 17, 15, 2.

(b) Stratigraphy, Paleontology.—If the student cares more for the history of rocks, the order in which they were laid down, their distribution, the conditions which gave them their peculiarities, and the evolution of living forms as shown by the succession of fossils, the following order of courses is suggested: 19, 1, 1a, 9, 16, 5, 18, 20, 15, 4.

(c) Physiological Geology, Physical Geography.—If his interest lies more in the earth's surface, the origin of its topographic forms, the agencies which are transforming them, and the influence of these upon the welfare of plants, animals, and man, the following courses are advised, in order: 19, 14, 10, 5, 1a, 11, 8, 20, 17, 4. These courses will be of especial interest to prospective teachers of physiography.

The attention of students in literature and science who can devote but a single semester to the subject is directed to the fol-

lowing courses: 3, 1, 10, 14, 8; for students in commerce courses 14 and 8 are recommended.

COURSES FOR UNDERGRADUATES

1. GENERAL GEOLOGY.—A study of the agents and processes involved in the development of the earth's present features. Lectures and laboratory work. *I; (5). Daily, with occasional trips on Saturday.* Assistant Professor SAVAGE.

Prerequisite: Chemistry 1 or an equivalent.

1a. HISTORICAL GEOLOGY.—A continuation of Course 1. A study of the evolution of the earth and its life. Lectures and laboratory work. The laboratory work will consist largely of a study of a few of the more characteristic fossils from the various horizons. This forms an introduction to Courses 9 and 16. *II; (5).* Assistant Professor SAVAGE.

Prerequisite: Geology 1, 3 or 10.

2. ECONOMIC GEOLOGY.—A study of the origin and manner of occurrence of minerals and rocks of economic importance, with special reference to those found in North America. Lectures and laboratory work. *II; (5).* Associate Professor BAYLEY.

Prerequisite: Geology 5 and 1, and 1a or 3.

3. ELEMENTS OF GEOLOGY.—A synoptical course treating of the leading facts and principles of mineralogy, and dynamic, historic, and economical geology. It should be taken by those who do not expect to devote more than one semester to the subject. One hour each day is devoted to laboratory work, and the time is about equally divided between the study of minerals, rocks, contour maps, etc., and fossils. *I; (5). Daily, with occasional trips on Saturday.*

Professor ROLFE, Dr. BAGG.

4. THESIS COURSE.—Students taking this course are assigned certain field or laboratory problems upon which they are expected to make a complete report under the direction of some one of the instructors in the department, with maps, sections, and figures based on their own observations. *II; (5).*

5. MINERALOGY.—Intended to furnish an introduction to succeeding work in petrography and economic geology, and to furnish a general working knowledge of the most common ores and minerals of scientific importance. The course consists of lectures and laboratory exercises upon the elements of crystallography and

upon such characteristics of about 125 of the most important minerals as will enable the student to become thoroughly familiar with them. The laboratory work includes a short course in blow-pipe analysis. *I*; (5). Associate Professor BAYLEY.

Prerequisite: Chemistry 1, 2, and 3.

6. PHYSICAL AND OPTICAL MINERALOGY.—A direct introduction to the course in petrography. The physical and optical properties of minerals are discussed in lectures and in laboratory studies with special reference to their relations with respect to symmetry. The larger portion of the work is devoted to the study of polarized light and its practical use in identifying the rock-forming materials. *II*; (3). Associate Professor BAYLEY.

Prerequisite: Geology 5.

7. PETROGRAPHY.—The principles taught in Course 6 are applied to the study of rocks. Lectures describe the different types of these rocks and discuss their origin and classification. In the laboratory a representative suite of specimens is studied in the hand specimen and thin section. *I*; (3).

Associate Professor BAYLEY.

Prerequisite: Geology 6.

8. PHYSICAL GEOGRAPHY.—Physiography of Europe with selected regions in the Americas, Asia, Africa, etc. This course will be useful to students in the courses in commerce, as it explains the physical conditions which control the production of the principal commodities used by man. It also supplements Course 11. *II*; (3).

Professor ROLFE, Mr. HUTTON.

Prerequisite: Geology 14.

9. PALEONTOLOGY.—A study of paleozoic invertebrate fossils, their classification and relationships. Instruction will be given in the identification of the fossils, and in the finding and use of the literature of the subject. Lectures and laboratory. *I*; (5).

Assistant Professor SAVAGE.

Prerequisite: Geology 1a. Recommended: one year of botany or zoology.

10. PHYSIOGRAPHIC GEOLOGY.—A course in general geology in which special stress is laid on the origin, modification, and destruction of geographic forms, and on the relation of these forms to underlying geologic structure. This course together with Course

14 will be of special interest to those who expect to teach physical geography. *II*; (5). Professor ROLFE, Mr. HUTTON.

11. **PHYSIOGRAPHY OF THE UNITED STATES.**—A study of the topography, climatology, and economic geography of the United States and contiguous portions of Canada and Mexico. *I*; (5).

Professor ROLFE, Mr. HUTTON.

Prerequisite: Geology 14 and 1 or 3 or 10.

12. **GEOLOGY OF SOILS.**—A discussion of those portions of geology which help to explain the origin of the various classes of soils, the mineral composition and physical characteristics of each class, and the transformations which they undergo. *II*; (5).

Professor ROLFE, Dr. BAGG.

Prerequisite: Chemistry 1 or an equivalent.

14. **METEOROLOGY.**—An elementary course in meteorology, oceanography, and climatology. This course deals with the general circulation of the atmosphere; ocean currents; the laws of storms; and the influence of these on the distribution of rainfall and the climatic conditions which control the geographic distribution of plants and animals. *I*; (3). Professor ROLFE, Mr. HUTTON.

This course is prerequisite for Geology 8.

Courses 14 and 8 should be taken with Economics 26 by students of commerce.

15. **STRUCTURAL GEOLOGY.**—An account of the arrangement of the rocks which form the earth's crust, and their consequent distribution on its surface. A study of mountains, faults, folds, and other diastrophic phenomena. *I*; (5). Associate Professor BAYLEY.

Prerequisite: Geology 1a.

16. **STRATIGRAPHY.**—This course follows Course 9, and is a study of the methods and criteria employed in the correlation of strata, of the characteristic invertebrate faunas of the successive geologic formations and their distribution, and of the application of these studies to the problems of stratigraphy. Lectures and laboratory. *II*; (5).

Assistant Professor SAVAGE.

Prerequisite: Geology 9.

17. **CONTINENTAL EVOLUTIONS.**—A study of the development of continents based on the distribution of the strata of the successive geological systems, and the character and variations of the sediments with their faunas in each period. Also conclusions based upon them as to the distribution of lands and seas, and their rela-

tive altitudes in geologic ages. *I*; (5).

Dr. BAGG.

Prerequisite: Geology Ia or II.

18. MESOZOIC AND TERTIARY PALEONTOLOGY.—A study of the classification and development of mesozoic and tertiary invertebrate fossil forms with some consideration of the evolution of vertebrates during the same periods. *II*; (5).

Dr. BAGG.

Prerequisite: Geology Ia and Geology 9, or 10 credits in botany or zoology.

This course will be especially helpful to those who specialize in botany or zoology.

19. FIELD GEOLOGY.—INTRODUCTORY COURSE.—In September, 1910, a field trip of two weeks will be taken introductory to the regular courses in general geology and physiography. Stops will be made at a number of points in Indiana and Ohio and at the Wyandotte or Mammoth Cave. The localities visited will illustrate the marked difference between the physiographic features of youthful and mature topography and of glaciated and non-glaciated areas. Fossils will be collected from the different rock exposures and their use in determining the age of strata will be explained. Expenses will be kept down to the minimum and it is thought that they need not exceed \$35.00. *I*; (2).

Assistant Professor SAVAGE.

20. FIELD GEOLOGY.—A short field course in geology will be given during the summer of 1910 (June 16 to 30). This will involve training in the field determination of physical features and rock formations, with mapping and description, of a small area in Carroll county, Illinois. *II*; (2). Assistant Professor SAVAGE.

GERMANIC LANGUAGES

GERMAN

FIRST-YEAR COURSES

Assistant Professor MEYER is in general charge of these courses.

1. ELEMENTARY COURSE.—Grammar and easy reading. *I*; (4). Assistant Professor MEYER, Miss BLAISDELL, Dr. CHILES, Dr. POOR, Dr. WILLIAMS, Mr. DeVRIES.

3. NARRATIVE AND DESCRIPTIVE PROSE.—Grammar and syntax, reading of easy texts, exercises in prose composition. *II*; (4).

Assistant Professor MEYER, Miss BLAISDELL, Dr. CHILES, Dr. POOR, Dr. WILLIAMS, Mr. DEVRIES.

Note.—Two sections of German 3 will be offered in the first semester.

Prerequisite: German 1, or one year of high school German.

SECOND-YEAR COURSES

Assistant Professor BROOKS is in general charge of these courses.

4. DESCRIPTIVE AND HISTORICAL PROSE.—Selections from standard prose writers. Sight reading. Prose composition. I; (4). Assistant Professor BROOKS, Miss BLAISDELL, Dr. CHILES, Dr. POOR, Dr. WILLIAMS, Mr. DEVRIES.

Prerequisite: German 1 and 3, or two years of high school German.

Note.—Two sections of German 4 will be offered in the second semester.

5. INTRODUCTION TO CLASSICS.—Two or three of the classics, such as Schiller's *Jungfrau von Orleans*, or Goethe's *Hermann und Dorothea*. Prose composition. II; (4). Assistant Professor BROOKS, Miss BLAISDELL, Dr. CHILES, Dr. POOR, Dr. WILLIAMS, Mr. DEVRIES.

Prerequisite: German 4.

6. SCIENTIFIC PROSE.—Practice in the rapid reading of works of a general scientific character. II; (4).

Dr. POOR, Dr. WILLIAMS, Mr. DEVRIES.

Prerequisite: German 4.

THIRD-YEAR COURSES

Not more than ten hours of these courses may be counted towards a major without the approval of the head of the department.

13. MODERN FICTION.—Rapid reading of works by modern writers such as Hauff, Freytag, Keller, Storm, and others. Open only to freshmen. I; (3). Assistant Professor BROOKS.

Prerequisite: Three (or four) years of high school German.

14. INTRODUCTORY SCHILLER COURSE.—Reading of works illustrating different periods in Schiller's development such as *Kabale und Liebe*, *Don Carlos*, *Braut von Messina*, and others. Not open to freshmen. I; (3). Assistant Professor BROOKS.

Prerequisite: German 5 or its equivalent.

24. MODERN DRAMA.—Rapid reading of dramas by Grillparzer, Hebbel, Hauptmann and others. Not open to freshmen. *I*; (3).

Mr. ———

Prerequisite: German 5 or its equivalent.

28. GERMAN LYRICS.—Study of the chief lyric poets of the classical period in the first semester, and of the nineteenth century in the second semester, with some attention to the form, development, and different types of the lyric. Each semester may be taken separately, although students are not advised to take the second without the first. Not open to freshmen. *I, II*; (2).

Assistant Professor MEYER.

Prerequisite: For first semester, German 5 or equivalent; for second semester, German 14 or 24, or first semester of 16 or 28.

16. INTERMEDIATE PROSE COMPOSITION.—Translation of ordinary prose into German, study of idiomatic construction and practice in rendering at sight. The work is conducted as far as possible in German. *I, II*; (2). Miss BLAISDELL, Dr. CHILES, Dr. POOR.

Prerequisite: German 5 or equivalent.

10. INTRODUCTORY GOETHE COURSE.—Reading of works illustrating different periods in Goethe's development such as *Götz von Berlichingen*, *Egmont*, *Iphigenie auf Tauris*, and selections from *Dichtung und Wahrheit*. *II*; (3).

Assistant Professor MEYER, Assistant Professor BROOKS.

Prerequisite: German 13 or 14 or 24, or first semester of 16.

15. CRITICAL AND HISTORICAL PROSE.—Reading of selections from standard writers dealing with important phases of German history, literature, and culture. Not open to freshmen. *II*; (3).

Mr. ———

Prerequisite: German 14 or 24 or first semester of 16 or 28.

PRIMARILY FOURTH-YEAR COURSES

8. SCHILLER.—The life of Schiller and study of *Wallenstein* and other selections. *I*; (3). Associate Professor LESSING.

Prerequisite: German 10 or 24 or 28 or 29.

9a. GOETHE'S FAUST.—The Faust legend and early Faust books and plays, the genesis of Goethe's *Faust*, reading of both parts. *I, II*; (2). Professor GOEBEL.

9b. GOETHE-SCHILLER.—Interpretation of Goethe's poems.

Goethe's *Tasso* and Schiller's *Ueber naive und sentimentalische Dichtung*. I, II; (2).

Professor GOEBEL.

(Omitted in 1910-11.)

26. GERMAN LITERATURE BEFORE THE REFORMATION.—Lectures, recitations, and reports on assigned reading. This course is intended to cover the period not included in course 11. I; (3).

Associate Professor LESSING.

Prerequisite: German 10 or 24 or 28.

11. GERMAN LITERATURE AFTER THE REFORMATION.—Lectures, recitations, and reports on assigned collateral reading. II; (3).

Associate Professor LESSING.

Prerequisite: German 26.

25. TEACHERS' COURSE.—Discussion of methods, examination of text-books. Open to seniors and special students who have not less than 20 hours' credit in German. It should be accompanied or preceded by Education 1 or its equivalent. II; (2).

Assistant Professor BROOKS.

Prerequisite: First semester of German 29 or equivalent.

27. LESSING.—The life of Lessing and study of *Nathan der Weise*, *Emilia Galotti*, and other selections. II; (3).

Associate Professor LESSING.

Prerequisite: German 8 or 10 or first semester of 9 or 29.

29. ADVANCED PROSE COMPOSITION.—An advanced teachers' course aiming to give some facility in idiomatic expression in speaking and writing German. Themes on Germany and German life, based on suitable reading, discussed in German. I, II; (2).

Mr. ———.

Prerequisite: German 16.

Courses 9, 11, and 29 are especially recommended to all candidates for graduate scholarships in German; these same courses, together with Course 25, are recommended to all seniors who expect to teach German.

COURSES FOR GRADUATES

101. THE SEMINARY IN GERMAN PHILOLOGY is conducted by Professor Goebel. The work is adapted to the abilities and tendencies of the students. The primary object is to give training in original research. The results of the work, when of value, may be published in the *Journal of English and Germanic Philology*. The

subjects for 1910-1911 will be, for the first semester, Klopstock's *Oden*, for the second, Hölderlin. *I, II.*

103. INTRODUCTION TO THE HISTORICAL STUDY OF THE GERMANIC LANGUAGES.—Lectures; discussions of special topics. History of German Philology. Comparative Grammar of the Old Germanic dialects. *II.* Professor GOEBEL.

104. GOTHIC.—An introductory study of its grammar and literature. *I.* Professor GOEBEL.

105. OLD HIGH GERMAN.—Grammar and interpretation of the oldest literary documents. *II* Mr. ———

106. MIDDLE HIGH GERMAN.—Grammar and interpretation of selected texts. Open to seniors; especially recommended to candidates for teachers' certificates. *I.* Professor GOEBEL.

109. GOETHE UND SCHILLERS PHILOSOPHISCHE WELTANSCHAUUNG. *I, II.* Professor GOEBEL.

110. EARLY GERMAN DRAMA.—The development of the German drama up to the Reformation, including the medieval religious drama, the Shrovetide plays and the beginning of the Humanistic drama. *I.* Assistant Professor BROOKS.

113. GERMAN LITERATURE OF THE FIFTEENTH AND SIXTEENTH CENTURIES.—Survey of the literature on the background of the general history of the time. Luther and the Reformation, Mastersingers and Folksong, the Reformation drama, Hans Sachs, Brant, Fischart, the chap books, the English comedians. *II.*

Assistant Professor BROOKS.

115. HISTORY OF GERMAN LITERATURE FROM GOETHE'S DEATH TO THE PRESENT TIME.—*I, II.* Associate Professor LESSING.

116. HISTORY OF LITERARY CRITICISM IN GERMANY.—*II.*

.. Associate Professor LESSING.

(Omitted in 1910-1911.)

117 HISTORY OF GERMAN LITERATURE DURING THE EIGHTEENTH CENTURY.—*I.* Professor GOEBEL.

(Omitted in 1910-1911.)

118. STUDIES IN THE HISTORY OF THE GERMAN DRAMA WITH SPECIAL REFERENCE TO KLEIST AND GRILLPARZER.—*I, II.*

Associate Professor LESSING.

(Omitted in 1910-1911.)

119. THE GERMAN NOVEL.—Research course. *I, II.*

Associate Professor LESSING.

121. GUDRUN.—Lectures and interpretations.—II.

Professor GOEBEL.

123. THE ROMANTIC SCHOOL.—The course deals with the literary side of early Romanticism in Germany. Lectures and reports on assigned topics. I. ..Mr.—————

124. HISTORY OF THE DRAMA.—Brief survey of the beginnings and earlier development of the drama, followed by a more intensive study of its development in the eighteenth century. I.

Assistant Professor MEYER.

SCANDINAVIAN LANGUAGES AND LITERATURES

UNDERGRADUATE COURSES, NOT OPEN TO FRESHMEN

1. ELEMENTARY NORWEGIAN.—Principles of the grammar, reading and introduction to the literature. (This course, omitted in 1910-1911, will be given again in 1911-1912.)

2. ELEMENTARY SWEDISH.—Principles of the grammar and the reading of easy prose, followed by Selma Lagerlof's *En Herrgards-sågen*, Nyblom's *Det Ringer* and Runeberg's *Fänrik Ståls Söner*. The class work will, in the second semester, be supplemented by lectures on Runeberg, Strindberg and Selma Lagerlof. I, II; (2 or 3).

Assistant Professor FLOM.

3. IBSEN'S *Brand* AND *Peer Gynt*.—Advanced Norwegian. Interpretation of the two dramas together with a study of the language and style. Olsen's edition of *Brand* is used.

Prerequisite: Course 1 or the equivalent. I; (2).

from the heroic lays. I, II.

Assistant Professor FLOM.

4. ESAIAS TEGNER.—Reading in class and study of Tegner's great masterpiece, *Frithjofs Saga*, with reference to genesis, development and influence. Lectures on Swedish romanticism and "The Gothic School". (This course, omitted in 1910-1911, will be given again in 1911-1912.)

5. HENRIK IBSEN.—Lectures and interpretation of selected works. Early influences in Ibsen's life, the development of his art and his view of life, his dramatic technique as illustrated in his latest dramas. The works studied in 1910-1911 will be *Brand*, *A Doll's House*, and *Ghosts*. Archer's translation is used; the course does not presuppose a knowledge of Norwegian. II; (2).

Assistant Professor FLOM.

12. NORSE MYTHOLGY.—An outline of the religious belief of the Norseman in pre-Christian times and interpretation of the principal myths with reference to origin and meaning. Knowledge of a Scandinavian language not required. *I; (2).*

Assistant Professor FLOM.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

11. SURVEY OF THE HISTORY OF THE SWEDISH LANGUAGE AND LITERATURE.—Lectures. (This course, omitted in 1910-1911, will be given again in 1911-1912.)

GRADUATE COURSES

101. OLD NORSE.—Introduction to the language as a member of the Germanic group. Reading of the *Volsungasaga* with selections from the heroic days. *I, II.*

Assistant Professor FLOM.

102. OLD DANISH.—Introduction to the language. Reading of selections from the oldest texts and of the ballads. *I.*

Assistant Professor FLOM.

103. OLD SWEDISH.—Introduction to the language. Noreen's *Altschwedische Grammatik* and *Lesebuch* will be used. This course will be given in the second semester of 1910-1911 if there is a sufficient call for it.

110. ADVANCED OLD NORSE.—A critical study of all the lays of the *Elder Edda* with selections from the *Dhidhreks saga*. *I, II.*

Assistant Professor FLOM.

GREEK

SEE CLASSICS

HISTORY

Students who expect to teach history or to make that subject a major are advised to take during their freshman year History 1 and 11. For the sophomore year History 3 and 23 are recommended. During the junior and senior years students may select courses from groups B and C, in accordance with their individual tastes and interests. For students who expect to teach in secondary schools some work in ancient history is also important.

A. COURSES OPEN TO FRESHMEN

(Seniors taking these courses may receive half credit only.)

I. CONTINENTAL EUROPEAN HISTORY.—This course gives a general survey of continental European history from the Fall of Rome to the present time as a basis for further work in history, literature and politics. Two hours a week of lectures are supplemented by two hours of recitation in small divisions where direction is given the students in note-taking and library work. The work of neither semester may be taken separately without special permission. *I, II; (4).* Professor FORD, Dr. PAETOW.

II. HISTORY OF ENGLAND TO 1589.—In this course the emphasis is placed on political events, but some attention is also given to social and institutional history. Gardiner's *Student's History of England* is used as a guide; the text-book is supplemented by lectures and collateral reading. The course may advantageously be combined with English economic history (Economics 7), or continental European history (History 1). *II; (3).*

Assistant Professor LARSON.

B. UNDERGRADUATE COURSES NOT OPEN TO FRESHMEN

3. HISTORY OF THE UNITED STATES.—The first semester will cover the colonial era, the Revolution, and the genesis of the federal constitution. The second semester will cover the history of the United States under the Constitution. Emphasis is laid upon political and constitutional history, but considerable attention is also given to economic, social, and religious development. This course may with advantage be combined with Political Science 1 and 3, and Economics 22. The work of either semester may be taken separately. *I, II; (3).*

Professor GREENE, Assistant Professor ROBERTSON.

Prerequisite: One year of college work.

5. HISTORY OF GREECE.—*I; (3).* This course is described under the Department of Classics as Greek 20.

6. HISTORY OF ROME.—*II; (3).* This course is described under the Department of Classics as Latin 19.

7. THE REVOLUTIONARY AND NAPOLEONIC ERA.—This course includes a survey of French conditions in the eighteenth century before 1774, an account of the events between 1774 and 1789 which precipitated the revolution in France, the reform work of the early

years of the Revolution, and the rise and dominance of Napoleon in France and Europe. Text-books, readings, and lectures. *I*; (3).

Professor FORD.

Prerequisite: History 1.

17. THE HISTORY OF ILLINOIS.—The subject is treated not from a purely local point of view, but as illustrating the development of a typical commonwealth in the Middle West. This course may properly be combined with Political Science 3. *I*; (2).

Associate Professor ALVORD.

Prerequisite: History 3.

20. EUROPE IN THE NINETEENTH CENTURY.—An account of the national movements of the nineteenth century and of those European political conditions which form the basis of modern world politics. Text-books, lectures, and readings. *II*; (3).

Professor FORD.

Prerequisite: History 1.

23. HISTORY OF MODERN ENGLAND.—This course is a continuation of History 11, and follows the same general plan; but less attention is given to internal political development and more to the colonial and imperial phases of English history, such as the settlement of America, the conquest of India, and the relations of England with Ireland, Scotland, and the British possessions. *I*; (3).

Assistant Professor LARSON.

Prerequisite: History 1 or 11.

28. THESIS.—This course is especially intended for candidates for honors and for other seniors who wish special training in investigation. Honor theses may, however, be written in connection with other courses offered by the department. *I, II*; (2).

Assistant Professor ROBERTSON and other members of the department.

C. COURSES FOR GRADUATES AND QUALIFIED UNDERGRADUATES

No student is admitted to any of these courses without at least junior standing

(The ability to use French and German is desirable in all of these courses and is essential in some of them).

4. CONSTITUTIONAL HISTORY OF ENGLAND.—During the first semester, the emphasis is placed on institutional origins; in the

second semester particular attention is given to modern constitutional practice. *I, II; (3).* Assistant Professor LARSON.

Prerequisite: Either History I, or History II and 23.

8. MEDIEVAL CULTURE.—The main object of this course is to trace the intellectual development of medieval civilization. In the period of transition from pagan to Christian culture typical figures like St. Augustine, Boethius, and Gregory the Great are studied in some detail. In the twelfth and thirteenth centuries prominence is given to such topics as the strife over investitures, the crusades, rise of universities, the vernacular literature, development of Gothic architecture and scholasticism. *I; (3).* Dr. PAETOW

Prerequisite: History I.

9. THE ERA OF THE RENAISSANCE.—This course deals with the political, religious, and economic history of Europe, during the fourteenth and fifteenth centuries, as well as the intellectual and artistic revival. It is designed to be a continuation of course 8, although either may be taken separately. *II; (3).* Dr. PAETOW.

Prerequisite: History I.

13. THE AMERICAN REVOLUTION, 1760-1783.—The following topics will be considered: The American people and their institutions at the close of the colonial era; the causes of the Revolution, 1760-1775; a survey of the war period, 1775, 1783, with emphasis on economic, social, and political changes, rather than upon military and diplomatic transactions. *I; (3).* Professor GREENE.

Prerequisite: History 3.

(Not given in 1910-1911.)

14. THE MAKING OF THE FEDERAL CONSTITUTION.—This course provides for an intensive study, based upon original material, of the events from 1783 to 1789 which resulted in the framing and ratification of the Federal Constitution. Special attention will be given to the proceedings of the Federal Convention of 1787 and the contemporary arguments for and against the ratification of the Constitution. *I; (3).* Professor GREENE.

Prerequisite: History 3.

15. THE CIVIL WAR AND THE RECONSTRUCTION OF THE SOUTHERN STATES.—This course begins with a careful study of life and institutions in various sections of the country just before the secessions of the southern states. In the treatment of the Civil War stress will be laid upon political and economic conditions rather than upon

military campaigns. In the treatment of the reconstruction period emphasis will be laid upon southern conditions. *II; (3).*

Professor GREENE.

Prerequisite: History 3.

18. THE TEACHING OF HISTORY.—This course is intended to prepare students for the practical problems of historical teaching in secondary schools by giving them some knowledge of the literature of the subjects most commonly covered in the high school course and the kind of material available for illustrative purposes. Considerable attention is also given to the methods of historical teaching adapted to young pupils. Open to seniors only. *II; (2).*

Assistant Professor LARSON, assisted by other members of the department.

Prerequisite: History I and 3 or their equivalents.

22. AMERICAN HISTORY, 1820-1860.—Selected topics in social and political history. *II; (3).*

Professor GREENE.

Prerequisite: History 3.

(Not given in 1910-1911.)

26. THE MODERN HISTORY OF SPAIN.—A rapid survey of the early history of Spain, followed by a closer study of the modern period. This course is intended to furnish a background for the study of Spanish colonization in America, but should also be useful to students of Spanish literature. *I; (3).*

Assistant Professor ROBERTSON.

Prerequisite: History I.

27. THE HISTORY OF LATIN AMERICA AND THE PHILIPPINES.—During the first semester the topics covered will be as follows: The discovery and exploration of the New World; the settlement, administration, and civilization of the Latin-American colonies; the struggles for independence. During the second semester the course will include a survey of the national history of the leading Latin-American states, with special attention to political parties, existing governments, and relations with the United States. *I, II; (3).*

Assistant Professor ROBERTSON.

Prerequisites: History I and 3.

COURSES FOR GRADUATES

101. SEMINARY IN AMERICAN HISTORY.—The work of this course consists partly of general exercises in which all the members of the

class are expected to take part. In these exercises some attention will be given to the general bibliography of American history, but a large part of the time will be devoted to the cooperative study of typical problems. During the first semester of 1910-1911 these problems will be selected from the history of the American colonies in the seventeenth century; during the second semester the topics will be taken from the field of western history. At the option of the instructors and the student this course may also include the preparation of a thesis based upon the results of original research. *I, II.* Professor GREENE and Associate Professor ALVORD.

102. STUDIES IN ENGLISH HISTORY.—The purpose of this course is to provide an opportunity for a closer study of some of the more important periods and movements of English history. The year 1910-1911 will be devoted to a study of social and political problems of the later middle ages. *I, II.* Assistant Professor LARSON.

103.—HISTORICAL BIBLIOGRAPHY AND CRITICISM.—Selected problems in various fields are worked out under the guidance of the several instructors. Required of all candidates for an advanced degree in history who do not present evidence of similar training elsewhere. *I, II.*

Dr. PAETOW, assisted by other members of the department.

104. SEMINARY IN MODERN EUROPEAN HISTORY.—*I, II.*—Professor FORD.

(Not given in 1910-1911.)

105. THE HISTORY OF WESTERN EXPANSION, 1763-1818.—The period indicated is covered by lectures and readings, but the main object of the course is the study of various problems in the interpretation of western history. *I, II.* Associate Professor ALVORD.

106. THE FORMATION AND DEVELOPMENT OF BRANDENBURG-PRUSSIA FROM 1640 TO 1786.—This course gives an opportunity for somewhat detailed study of the work of the Great Elector, Frederick William I., and Frederick the Great. *I, II.* Professor FORD.

107. SELECTED TOPICS IN THE HISTORY OF THE NINETEENTH CENTURY.—This course does not aim at a connected presentation of the whole period, but certain events, persons, and movements are selected for intensive study. *I, II.* Professor FORD.

108. FRENCH INSTITUTIONAL HISTORY DURING THE SEVENTEENTH AND EIGHTEENTH CENTURIES.—The gradual development of the institutions of the centralized government will be traced by means

of a careful study of the fundamental laws. In a similar manner the methods adopted to promote economic development, particularly those concerned with commerce and colonial expansion, will be studied. *I.* Associate Professor ALVORD.

109. THE HISTORY OF THE FRENCH COLONIES IN AMERICA.—The history of French exploration and settlement in America will be studied, so far as possible, in the primary sources. Particular attention will be given to French colonial institutions and to the discovery and colonization of the Mississippi Valley. *II.*

Associate Professor ALVORD.

110. THE SPANISH-AMERICAN REVOLUTION.—A detailed study of the movements which culminated in the independence of the Spanish-American states. *I.* Assistant Professor ROBERTSON.

111. SPANISH-AMERICAN DIPLOMACY.—A consideration of the problems which have arisen in the relations of the leading Spanish-American states with Europe and the United States. *II.*

Assistant Professor ROBERTSON.

History 110 and 111 are open only to students who possess a reading knowledge of the Spanish language.

112. SELECTED TOPICS IN THE HISTORY OF THE AMERICAN COLONIES IN THE EIGHTEENTH CENTURY.—The special subject selected this year is a study of American society on the eve of the Revolution. *II.* Professor GREENE.

HOUSEHOLD SCIENCE

The Household Science courses give (1) a liberal education upon the basis of pure and applied science, and (2) an opportunity for scientific study of the problems of the home.

1. PRINCIPLES OF THE SELECTION AND PREPARATION OF FOOD.—The nature and uses of food, its chemical composition, and the changes effected by heat, cold, or fermentation. Practical illustrations of the principles of selection are given by marketing expeditions. Some of the processes of the manufacture of food are considered, as well as the combinations of different kinds. *II*; (3).

Assistant Professor VAN METER, Miss CRIEGLER.

Prerequisite: Entrance credit in Physics; Chemistry 1.

2. HOME ARCHITECTURE AND SANITATION.—The situation, surroundings, and construction of the house; the hygiene of the home; heating, lighting, ventilation, water supply, and drainage. Lec-

tures on house planning, with exercise in making skeleton plans, and on sanitary plumbing and fixtures and internal drainage. *I*; (2). Professor WHITE, Miss GIBBS, Mr. CLARK.

3. ELEMENTARY HOME DECORATION.—A continuation of Course 2. Lectures on the evolution of the house and the homes of primitive peoples; the theory of color and its application in home decoration. The evolution of the home; furnishings from a sanitary and artistic standpoint. *II*; (2). Professor BEVIER, Professor RICKER.

Prerequisite: Art and Design, 1, Architecture 41, Household Science 2.

4. FOOD AND NUTRITION.—An application of the principles of pure science to the problems of food and nutrition. The problems may be physiological, chemical, or bacteriological. Each student investigates some particular problem. *I*; (5).

Assistant Professor USHER, Dr. GOLDTHWAITE.

Prerequisite: Botany 5; Chemistry 1, 2 and 3, 13a, 9 and 9c; five hours in botany or zoology; Household Science 1, 6 and 5.

5. DIETETICS.—The work in dietetics includes the following topics: the principles of diet; the relation of food to health; influence of age, sex, and occupation on diet; the construction of dietaries; dietetic treatment of certain diseases; principles of home nursing. Laboratory practice is given in the course. *II*; (3).

Assistant Professor USHER.

Prerequisite: Household Science 1 and 6; Physiology 4.

6. ECONOMIC USES OF FOOD.—This course is a continuation of Course 1. Emphasis is put upon the economic side of the food question. The uses and application of preservatives are considered. *I*; (3).

Assistant Professor VAN METER.

Prerequisite: Household Science 1.

7. TEXTILES.—The development of primitive industries, production of fibers used in textile manufacture. Practice is given in judging cloth and in the application of the principles of selection of color design in costumes. *I*; (2).

Miss GIBBS.

Prerequisite: Plain sewing.

12. HOUSEHOLD ART.—A continuation of Course 7. Materials suitable for various uses in home and in clothing; consideration of texture, of quality, of design in relation to form; of color in relation to environment and personality; hygienic properties and cost. *II*; (3).

Miss GIBBS

Prerequisite: Household Science 7; Art and Design 1; Architecture 41.

9. SEMINAR.—A study of various topics of home economics and individual problems in some one of these topics. *II*; (3).

Open to seniors only.

10. HOUSEHOLD MANAGEMENT.—This course deals with the organization of the household; expenditure of income; care of the house and family, including the cleaning of metals, woods, fabrics, and other essentials of a well-ordered home. *I*; (2).

Assistant Professor VAN METER.

Open to juniors and seniors.

Prerequisite: Household Science 1, 6 and 5; Economics 1.

11. TEACHERS' COURSE.—This course is designed for the prospective supervisor of the subject, or teacher in the graded schools. It aims to show the best method of presenting the work, and its correlation with other subjects. Practice is afforded in planning such courses, and some opportunity for presenting them. *II*; (2).

Professor BEVIER, Miss PINCOMB

Open to seniors.

Prerequisite: Household Science 1, 2, 3, 5, 6, 7, 12, 13.

13. HISTORY OF HOME ECONOMICS.—This course aims to make the student intelligent concerning the origin and development of home economics: It includes a study of the work in various types of institutions, and the planning of courses for these types. *I*; (1).

Assistant Professor USHER.

Open to juniors and seniors.

14. SPECIAL PROBLEMS IN CONNECTION WITH THE SERVICE OF FOOD.—A continuation of Course 6 dealing with the problems of marketing, domestic storage, management of menus, and utilization of waste food materials as modified by special conditions. *II*; (3).

Assistant Professor VAN METER.

Prerequisite: Household Science 6.

15. ECONOMICS OF THE FAMILY GROUP.—A study of the history and various forms of the family, with special reference to its economic organization for securing, distributing and expending its income and its relations as an economic and social unit to other economic and social units in the community. It includes, therefore, the consideration of such topics as the industrial organization of the family; money, and other income; the laws of consumption

and the interplay of economic physiological and psychological motives in expenditure and consumption; the reaction of the changing forms of modern industry on family industry; the economic, social and legal relations of the members of the family; the economic position of woman in modern society; the domestic servant problem; retail and wholesale markets, etc. *I, II; (3).*

Assistant Professor VAN METER.

Prerequisite: Household Science 3, 10, 12 and 14; Sociology 1; Economics 1; Philosophy 7 and 8.

16. PROBLEMS IN THE ECONOMICS OF THE FAMILY GROUP.—This is an advanced course dealing intensively with special problems treated in a general way in course 15. The work is individual and is done in the senior seminar in economics. *I, II; (2-4).*

Professor KINLEY.

Prerequisite: Household Science 15.

COURSES FOR GRADUATES

101. HOME ECONOMICS.—A study of the origin and development of home economics, with particular reference to its industrial, educational, and sociological aspects.

Professor BEVIER.

102. SPECIAL INVESTIGATION.—Problems in the application of the principles of bacteriology, chemistry, and physiology to the ordinary processes used in the preparation of food.

Professor BEVIER.

ITALIAN

See Romance Languages

LATIN

See Classics

MATHEMATICS

The courses offered by the department are arranged to meet the needs of three classes of students: (1) those who wish to elect the subject as an element in a general education; (2) those who will have occasion to make use of mathematics in cognate subjects, and (3) those who wish to specialize in mathematics. Those who select

mathematics as a major subject should take mathematics 2, 4, and 6 in the freshman year; mathematics 8a, 8b, and 10 in the sophomore year, and mathematics 16, 17a, 18a, and 19a, in the junior year. In the senior year the selection may be made from the courses open to graduates and undergraduates as seems desirable. Students specializing in mathematics are advised to take work also in some line of applied mathematics.

INTRODUCTORY COURSES FOR UNDERGRADUATES

2. COLLEGE ALGEBRA.—The work of this course assumes a knowledge of algebra through quadratics. *I*; (3). Three sections repeat the work in the second semester.

Professor MILLER, Assistant Professor RIETZ, Assistant Professor SISAM, Dr. CRATHORNE, Dr. BÖRGER, Dr. NEIKIRK, Dr. REED, Dr. LYTLE, Dr. WAHLIN, Dr. BUCK.

3a. SPHERICAL TRIGONOMETRY.—*II*; (2). Dr. REED.

Prerequisite: Solid and Spherical Geometry.

4. PLANE TRIGONOMETRY.—*I*; (2). Two sections repeat the work in the second semester.

Professor MILLER, Assistant Professor RIETZ, Assistant Professor SISAM, Dr. CRATHORNE, Dr. BÖRGER, Dr. NEIKIRK, Dr. REED, Dr. WAHLIN, Dr. BUCK.

5. TEACHERS' COURSE.—In this course special attention is given to a discussion of the methods of teaching algebra and geometry, the position of mathematics in the secondary school course, the correlation of mathematics with allied subjects, a comparative study of the leading text-books, and a brief history of elementary mathematics *II*; (2). Dr. LYTLE.

6. ANALYTIC GEOMETRY.—An introductory course in plane and solid analytic geometry. Sections T to V are for students of the College of Science and the College of Literature and Arts. *II*; (5).

Professor MILLER, Assistant Professor RIETZ, Assistant Professor SISAM, Dr. CRATHORNE, Dr. BÖRGER, Dr. NEIKIRK, Dr. REED, Dr. WAHLIN, Dr. BUCK.

Prerequisite: Mathematics 2 and 4.

7, 9. DIFFERENTIAL AND INTEGRAL CALCULUS.—The principles of the differential and integral calculus are developed and applied to functions of one and of several variables. *I*; (5); *II*; (3).

Assistant Professor RIETZ, Assistant Professor SISAM, Dr. CRA-

THORNE, Dr. BÖRGER, Dr. NEIKIRK, Dr. LYTLE, Dr. WAHLIN,
Dr. BUCK.

Prerequisite: Mathematics 6.

8a. DIFFERENTIAL AND INTEGRAL CALCULUS.—This is a shorter introductory course in differential and integral calculus intended primarily for the students in such courses as chemistry and chemical engineering which require but a single semester of the subject. I; (5). Professor MILLER, Dr. LYTLE.

Prerequisite: Mathematics 6.

9a. DIFFERENTIAL AND INTEGRAL CALCULUS.—(Second Course.) This course is for third year students and is designed to give a more detailed discussion of certain important topics than is possible in the first course (Mathematics 7 and 9). The following subjects are treated: The definite (single and multiple) integral with exercises in the formulation of problems arising in applied mathematics; line, surface, and volume integrals; the theorems of Stokes and Green; partial differentiation; exact differentials with applications of the conditions for exactness; elements of differential questions; approximate quadrature and integration of differential equations. I; (2). Dr. CRATHORNE.

Prerequisite: Mathematics 7 and 9.

18a. CONSTRUCTIVE GEOMETRY.—The purpose of this course is primarily the development and training of the student's power of space perception. To this end the properties of lines, planes, and the simpler surfaces of the second order are studied by various methods of parallel and central projection. Special stress is laid on the graphical interpretation of the processes of analytic geometry and the analytic discussion of the methods of descriptive geometry. II; (3). Assistant Professor SISAM.

Prerequisite: Mathematics 6.

COURSES FOR GRADUATES AND ADVANCED UNDERGRADUATES

10. INTRODUCTION TO HIGHER ALGEBRA.—This course aims to introduce the student to a few subjects in higher algebra, including linear dependence, theory of matrices, complex numbers, and the fundamental theorems of algebra. It begins with a study of a few fundamental properties of polynomials and determinants, presup-

posing at least two years training in college mathematics including a course in the calculus. *I*; (3). Professor MILLER.

Prerequisite: Mathematics 7 and 9 (or 8a).

II. SYNOPTIC COURSE IN MATHEMATICS.—This course is intended to give a general survey over a considerable portion of modern mathematics. The treatment will be largely historical, and will attempt to demonstrate the importance of mathematics in the intellectual history of the race. The principles which underlie the most important divisions of mathematical science, pure and applied, will be discussed but no attempt will be made to develop in the student that technical skill and intimate knowledge of detail which is necessary for the specialist. *I. II*; (2). Mr. —————

Prerequisite: Mathematics 2, 4, and 6.

16. DIFFERENTIAL EQUATIONS.—This course embraces the following topics: General linear equations with constant coefficients, special forms of differential equations of higher order, integration in series, etc. *I*; (3). Professor SHATTUCK.

Prerequisite: Mathematics 8a or 9.

17a. ADVANCED CALCULUS.—This course begins with the consideration of the fundamental notions and theorems of the calculus from a more advanced and critical point of view. This is followed by the study of certain more advanced topics in the integral calculus, including elliptic integrals and functions defined by definite integrals. *II*; (3). Dr. CRATHORNE.

Prerequisite: Mathematics 7 and 9.

19a. SOLID ANALYTIC GEOMETRY.—A general review of the equations of the plane and the right line in space and the more general properties of surfaces of the second degree. The classification and special properties of quadrics, and a brief introduction to the theory of surfaces in general. *II*; (3). Dr. BUCK.

Prerequisite: Mathematics 8a (or 7) and 10.

20. CALCULUS OF VARIATIONS.—This course has for its aim merely to acquaint the student with those elements of the science which are most needed in the study of the higher subjects of mathematical astronomy and physics. *II*; (3). Professor SHATTUCK.

Prerequisite: Mathematics 16.

21a. METHOD OF LEAST SQUARES.—The fundamental principles of the subject. The following topics are studied: law of probab-

ity and error, adjustment of observation, precision of observations, independent and conditional observations, etc. *I*; (2).

Assistant Professor STEBBINS.

Prerequisite: Mathematics 8a or 7.

22a. PARTIAL DIFFERENTIAL EQUATIONS.—This course deals with the integration and determination of the integration constants of such partial differential equations as arise in the study of such subjects as the flow of heat, the vibration of strings, plates, etc., and electricity. *II*; (2).

Dr. WAHLIN.

Prerequisite: Mathematics 16.

23a. AVERAGES AND THE MATHEMATICS OF INVESTMENT.—The meaning, use, and abuse of different kinds of averages. The relation of the theory of probability to averages, and the application of the elements of probability to annuities, insurance, and various branches of science. Such information relating to loans and investments as can best be put into algebraic language, and is of interest to the general student. Many practical problems are given in the evaluation of investment securities. *II*; (3).

Assistant Professor RIETZ.

Prerequisite: Mathematics 2 and junior standing.

24a. FUNCTIONS OF A COMPLEX VARIABLE.—A general introduction to the theory of functions of a complex variable. *I, II*; (3).

Professor TOWNSEND.

Prerequisite: Mathematics 7, 9, and 16.

27. PROJECTIVE GEOMETRY AND LINEAR TRANSFORMATIONS.—Sets of postulates for general projective geometry and the introduction of analytic methods on the basis of these assumptions. Projective transformations in the line, plane, and space. Introduction to the algebra of matrices and the theory of invariants. Subgroups of the general projective group. Euclidean, non-euclidean, and affine geometries. Theory of conics and quadric surfaces. Real and complex geometries. Throughout the emphasis is on geometric and algebraic interrelations. *I, II*; (3).

Dr. BÖRGER.

Prerequisite: Senior standing in Mathematics.

30. SEMINARY AND THESIS.—*I, II*; (3).

Professor TOWNSEND, Professor MILLER, Assistant Professor RIETZ, Assistant Professor SISAM.

31. ACTUARIAL THEORY.—The application of probability to life contingencies, the construction and graduation of mortality tables,

the elements of fire insurance, and the calculation of premiums for various types of insurance. *I*; (3). Assistant Professor RIETZ.

Prerequisite: Mathematics 8a and 23a.

COURSES FOR GRADUATES

101. FUNCTIONS OF REAL VARIABLES.—An introduction to the theory of functions of real variables, making use of the general principles of the theory of assemblages. *I, II.*

Professor TOWNSEND.

Prerequisite: Mathematics 16.

(Not given in 1910-1911; to be given in 1911-1912).

102. FOURIER'S SERIES.—This course is intended for students both of pure mathematics and of the physical sciences. It consists of a brief consideration of the elementary theory of Fourier's and allied series, followed by detailed discussion of numerous physical applications and consideration of classical and recent researches concerning the properties of Fourier's series and operations upon them. *I, II.*

Dr. CRATHORNE.

Prerequisite: Mathematics 16.

(Not given in 1910-1911; to be given in 1911-1912.)

103. THEORY OF POTENTIAL.—The elements of the theory of the logarithmic and Newtonian potential functions. Green's theorems and functions. Boundary value problems. Applications to physical problems. *I.*

Dr. CRATHORNE.

Prerequisite: Mathematics 16.

(Not given in 1910-1911.)

110. ELLIPTIC FUNCTIONS.—The elements of the theory of elliptic functions with application to geometry and mechanics. Introduction to the theory of the elliptic modular functions. *I, II.*

Mr. ———

Prerequisite: Mathematics 24a.

111. AUTOMORPHIC FUNCTIONS.—An introduction to the theory of automorphic functions. The first semester will be devoted mostly to the group-theoretic side of the theory; the second semester will be concerned with the function-theoretic developments and applications. *I, II.*

Mr. ———

Prerequisite: Mathematics 24a and preferably 27 and 110.

(Not given in 1910-1911; to be given in 1912-1913.)

112. ABELIAN FUNCTIONS.—Discussion of the algebraic functions of a complex variable and their integrals, Riemann's surfaces, birational transformations, Abel's theorem with geometrical applications, the inversion problem and the theta functions. *I, II.*

Mr. _____.

Prerequisite: Mathematics 24a, 110.

(Not given in 1910-1911; to be given in 1911-1912.)

113. THEORY OF LINEAR DIFFERENTIAL EQUATIONS.—*I, II.*

Dr. CRATHORNE.

Prerequisite: Mathematics 24a.

120. ELEMENTARY THEORY OF GROUPS.—The study of the groups which present themselves in arithmetic, geometry, and trigonometry is followed by a determination and study of those which can be represented with a small number of letters. The latter part of the course is devoted to the abstract group theory and the Galois theory of equations. *I, II.*

Professor MILLER.

121. THEORY OF GROUPS.—Second course. This course presupposes about one year's work in group-theory. It will be devoted to special topics depending upon the needs of the class. The early part of the course will be devoted to the consideration of recent advances and methods along these special lines, and it is hoped that the latter part may be used for research. *I, II.* Professor MILLER.

Prerequisite: Mathematics 120.

(Not given in 1910-1911; to be given in 1912-1913.)

124. THEORY OF NUMBERS.—The principal subjects considered in this course are: congruences, Kronecker's modular systems, quadratic residues, quadratic forms, and algebraic numbers. *I, II.*

Professor MILLER.

(Not given in 1910-1911; to be given in 1911-1912.)

129. THEORY OF STATISTICS.—The general methods of statistical investigation, the application of the theory of probability to statistical data, the fitting of curves to observation, interpolation, theory of errors, and the mathematical theory of variability and correlation, the application of the principles developed to problems in economics, sociology, and biology. *I, II.*

Assistant Professor RIETZ,

Prerequisite: Mathematics 8a.

(Not given in 1910-1911; to be given in 1911-1912.)

130. INVARIANTS AND HIGHER PLANE CURVES.—This course in-

cludes the general theory of algebraic curves, together with the application of the theory of invariants to higher plane curves. Special study is made of curves of the third and fourth order. *I, II.*

Assistant Professor SISAM.

Prerequisite: Mathematics 16 and 27.

(Not given in 1910-1911; to be given in 1911-1912.)

131. ALGEBRAIC SURFACES.—In this course are considered the application of homogeneous coordinates and the theory of invariants to geometry of three dimensions, and also the general theory of surfaces, together with the special properties of surfaces of the third and fourth order. *I, II.*

Assistant Professor SISAM.

Prerequisite: Mathematics 19a and 130.

135. METRIC DIFFERENTIAL GEOMETRY.—Applications of the calculus to the general theory of curves and surfaces based primarily on the use of Cartesian coordinates. Relation of the theory of surfaces to the theory of invariants of a pair of quadratic differential forms. *I, II.*

Mr. _____.

Prerequisite: Mathematics 16.

136. PROJECTIVE DIFFERENTIAL GEOMETRY.—This course includes a brief account of Lie's theory with applications to the theory of invariants of systems of linear differential equations. The differential properties of plane and space curves, and of surfaces are considered from a projective point of view. This more general, projective standpoint distinguishes the course from the usual treatment of differential geometry, which is metric. *I, II; (3).*

Mr. _____

Prerequisite: Mathematics 16, 27.

(Not given in 1910-1911; to be given in 1912-1913.)

140. THE FUNDAMENTAL CONCEPTS OF MATHEMATICS.—A course dealing with general concepts of higher mathematics in their bearing on elementary mathematics. *I.*

Mr. _____

Prerequisite: Senior standing in Mathematics.

(Not given in 1910-1911; to be given in 1911-1912.)

141. VECTOR ANALYSIS.—A systematic exposition of the subject based upon the notations of Gibbs, followed by a comparative study of the various systems which have been proposed. *I, II.*

Mr. _____

Prerequisite: Mathematics 8b. (Not given in 1910-1911.)

MILITARY SCIENCE

1. THEORETICAL INSTRUCTION.—Infantry Drill Regulations. For all male students. *II*; (1). Messrs. ———, ———

2. PRACTICAL INSTRUCTION.—*Infantry*.—School of the soldier; company and battalion; regimental ceremonies. *Artillery*.—School of the cannoneer and battery dismounted. Freshman and sophomore years. *I II*; (1). Professor MORSE.

3. THEORETICAL INSTRUCTION.—Sophomores. Drill Regulations and military administration. *I, II*; (1). Juniors. Field Service Regulations. *I, II*; (1). Seniors. Field Engineering. *I, II*; (1). This course is obligatory upon commissioned officers and sergeants, optional with corporals, and open to others. Professor MORSE.

AUTHORIZED TEXT-BOOKS.—*United States Drill Regulations; United States Army Regulations; Beach, Manual of Field Engineering; Field Service Regulations, United States Army.*

NORWEGIAN

See Germanic Languages

PHILOSOPHY

Students who make philosophy a major should take at least one year of psychology. With the exception of 1 and 10, no course may be taken before the completion of two years of University work.

1. LOGIC.—An introductory course dealing with the principles of reasoning, with special reference to the detection of fallacies and to the study of evidence. *I*; (3). Professor BODE.

Prerequisite: One year of University work.

1b. LOGIC.—The same as 1a. *II*; (3). Professor BODE.

Prerequisite: One year of University work.

2. INTRODUCTION TO PHILOSOPHY.—The relation of philosophy to modern science; the problems of philosophy; and the more representative forms of philosophic theory. *II*; (3). Professor BODE.

3. ANCIENT AND MEDIEVAL PHILOSOPHY.—A rapid survey of the development of speculative thought, beginning with the early Greek philosophers and continuing through the medieval period. *I*; (3). Professor DANIELS.

4. MODERN PHILOSOPHY.—The formation and development of

the problems and conceptions in philosophy from Descartes to the present time. Selections from the philosophical masterpieces of this period. *II; (3).*

Professor DANIELS.

7. ETHICS.—The beginnings and growth of morality; analysis and criticism of the leading conceptions of moral theory; discussion of some of the typical social and economic problems of the present. *II; (3).*

Professor DANIELS.

Prerequisite: Three hours in philosophy.

8. ESTHETICS.—Theory of the appreciation of art and nature; place of such appreciation in life. Primitive arts and appreciation. Modifications of the esthetic (such as the sublime and the ugly). Prime characteristics and relations of the various fine arts. *I; (3).*

Dr. NORTON.

Prerequisite: An elementary course in philosophy or psychology.

9. POLITICAL AND SOCIAL ETHICS.—A study of moral principles in their application to political and social relations. *I; (2).*

Professor DANIELS.

10. THE PHILOSOPHIC THOUGHT OF THE NINETEENTH CENTURY AS REFLECTED IN ENGLISH LITERATURE.—A study of Wordsworth, Carlyle, Emerson, Tennyson, Browning, and Arnold. *I; (2).*

Professor BODE.

(Not given in 1910-1911.)

11. HISTORY AND PHILOSOPHY OF RELIGION.—An historical and comparative study of religions. The philosophical interpretation of religious consciousness and a critical study of various religious concepts; God, revelation, inspiration, dogma, faith, prayer, immortality, the problem of evil, the relation of morality and religion. Open to senior and graduate students only. *I, II; (2).*

Professor DANIELS.

Prerequisite: Six hours in psychology, philosophy, or both.

15. THE BRITISH PHILOSOPHERS OF THE EIGHTEENTH CENTURY.—Locke, Berkeley, and Hume. *I; (3).*

Professor BODE.

Prerequisite: Philosophy 2 or 3 or 4.

16. KANT.—*The Critique of Pure Reason.* *II; (2).*

Professor BODE.

Prerequisite: Philosophy 15.

COURSES FOR GRADUATES

101. THE PHILOSOPHY OF PLATO AND ARISTOTLE.—*I, II.*

Professor DANIELS.

102. SEMINARY.—Contemporary Philosophy. A study of present-day idealism, realism, and pragmatism. *I, II.* Professor BODE.

PHYSICAL TRAINING

FOR MEN

1. GYMNASIUM PRACTICE.—Two hours gymnasium drill each week. Required of freshmen. *I, II; arrange time; (1).* Mr. HANA.

1a. PERSONAL HYGIENE.—Series of six lectures. Required in conjunction with Physical Training 1. *I.* Dean CLARK.

2. GYMNASIUM PRACTICE.—Two hours each week in advanced heavy apparatus work. *I, II; arrange time.* Mr. HANA.

FOR WOMEN

7. PRACTICE.—Class exercise in the gymnasium and field. Required of freshmen. *I, II; (1).*

Miss MOULTON. Miss WILLIAMS, Miss BROOKS, Miss LANDEE.

8. SECOND YEAR.—Elective. *I, II; (1).* Miss WILLIAMS.

9. HYGIENE.—The same as Physiology 6, which see. Required of all freshmen. *I; (1).* Miss ———.

10. TEACHERS' COURSE.—Third Year, Special. Two hours' practice in the public schools. One hour theory. *I, II; (1).*

Miss WILLIAMS.

11. TEACHERS' COURSE.—Fourth Year, Special. Three hours' teaching in the gymnasium. One hour theory. Credit by special recommendation. Miss MOULTON.

PHYSICS

INTRODUCTORY COURSES FOR UNDERGRADUATES

1. GENERAL PHYSICS.—Lectures with class room demonstrations, recitations, and written exercises. This course is taken regularly by sophomores in engineering, mathematics, physics, and chemistry. The laboratory course, Physics 3, is to be taken at the same time. *Two lectures and one quiz weekly. I; (3). II; (2).*

Professor CARMAN, Assistant Professor SCHULZ, Mr. STEMPEL, Mr. KEMP, Mr. HORNBEAK, Mr. HYSLOP, Mr. ROWLAND, Mr. WOODROW.

Prerequisite: Mathematics 3 or 4.

3. PHYSICAL MEASUREMENTS.—Laboratory experiments running parallel with Physics 1; *two two-hour periods each week*; during the first six weeks there will be quizzes in connection with Physics

1. I, II; (2).

Assistant Professor SCHULZ, Mr. STEMPEL, Mr. KEMP, Mr. HORNBEAK, Mr. HYSLOP.

Prerequisite: See Physics 1.

2a. GENERAL PHYSICS.—Lectures with class room demonstrations, and recitations. This course is recommended for students in courses in arts and science. The laboratory course, Physics 2b, is to be taken at the same time. *Two lectures and one quiz weekly.*

I, II; (2). Assistant Professor WATSON, Dr. TAYLOR.

Prerequisite: Mathematics 4 (which may be taken at the same time).

2b. INTRODUCTORY LABORATORY PHYSICS.—A course of physical measurements to supplement Physics 2a. *Two two-hour laboratory periods weekly.* I, II; (2).

Assistant Professor WATSON, Dr. TAYLOR.

Prerequisite: See Physics 2a.

15. ELECTRICITY AND MAGNETISM.—A laboratory course with lectures, assigned reading, and reports. I or II; (2).

Assistant Professor KNIPP.

Prerequisite: Physics 1 and 3, or 2a and 2b.

16. HEAT—Lectures and recitations on fundamental heat phenomena, and elements of the mechanical theory of heat. Laboratory experiments in thermometry, calorimetry, vapor pressures, expansion, and conduction and radiation of heat, mechanical equivalent of heat, etc. II; (2).

Assistant Professor WATSON.

Prerequisite: Physics 1 and 3, or 2a and 2b.

17. LIGHT.—Recitations and laboratory exercises. Edser's *Light* is used as a text-book. II; (2).

Assistant Professor SCHULZ.

Prerequisite: Physics 1 and 3, or 2a and 2b.

18. TEACHERS' COURSE.—Practical work for students preparing to teach physics. The course includes (a) discussion of class-

room text-books, laboratory manuals, apparatus ordering, and methods of conducting work in physics; (b) the working out in detail of a laboratory course suitable for a high school. The student will perform some of the experiments to be given in this proposed course, and will also do manipulative work with glass and apparatus when necessary. *I*; (2). Assistant Professor WATSON.

Prerequisite: Physics 1 and 3, or 2a and 2b.

COURSES FOR GRADUATES AND UNDERGRADUATES

4. ELECTRICAL AND MAGNETIC MEASUREMENTS.—Laboratory exercises with discussions and recitations. The course extends throughout the year. It is taken by junior students in electrical engineering and is recommended to others wishing an exact course in electrical and magnetic measurements. *Two three-hour periods weekly. I, II; (2).*

Assistant Professor KNIPP, Mr. STIFLER, Mr. STEPHENSON.

Prerequisite: Physics 1 and 3, or 2a and 2b; Mathematics 7 and 9.

14. ELEMENTARY DYNAMICS AND PHYSICAL APPLICATIONS.—This course discusses, with elementary calculus methods, the fundamental theorems in mechanics, heat, light, and electricity. It forms an introduction to theoretical physics and is to follow a course in general physics. (Physics 1 and 3, or 2a and 2b.) Lectures and recitations. *I, II; (3).*

Dr. TAYLOR.

Prerequisite: Physics 1 and 3, or 2a and 2b; and Mathematics 7 and 9, or 8a.

20a. LIGHT.—Lecture and recitations with class demonstrations of special phenomena. Modern theories are discussed and readings assigned in the texts of Drude, Wood, and Preston. *I or II; (2).*

Assistant Professor SCHULZ.

Prerequisite: Physics 1 and 3, or 2a and 2b; Mathematics 7 and 9, or 8a.

20b. LIGHT.—A laboratory course in light measurements, selected experiments in dispersion, refraction, interference, polarization, etc. Two to five periods weekly for either semester. *I or II; (2 to 5).*

Professor CARMAN.

Prerequisite: Physics 1 and 3, or 2a and 2b; Physics 17 desired.

23. SOUND.—Lectures and recitations. *Barton's* text-book on *Sound* will be used. *I; (2).*

Assistant Professor WATSON.

Prerequisite: Mathematics 7 and 9.

25. **HEAT.**—An advanced experimental and recitation course. Special attention is given to extreme temperature measurements, and the properties of bodies over a wide range of temperatures. Le-Chatelier's High Temperature Measurements is used as a reference text-book. *Twice a week. II.* Assistant Professor WATSON.

Prerequisite: Physics 1 and 3, or 2a and 2b; Physics 16 advised.

30a. **INTRODUCTION TO THEORETICAL ELECTRICITY.**—A course of lectures and recitations discussing the phenomena with elementary calculus methods, and with occasional lecture-room demonstrations. Text-books: Foster and Porter's Electricity and Magnetism, or Thompson's Elements of Electricity and Magnetism. *Two periods weekly for the year. I, II; (2).* Assistant Professor KNIPP.

Prerequisite: Physics 1 and 3, or 2a and 2b.

30b. **ELECTRICITY AND MAGNETISM.**—A course of electrical measurements, including experimental work in some of the more recent developments, such as electric waves and their application to wireless telegraphy, electrical discharge in gases, etc., *I or II; (2, 3, or 5).* Assistant Professor KNIPP.

Prerequisite: Physics 4; 30a desired.

PHYSIOLOGY

1. **HISTOLOGY.**—This course consists of a study of the fundamental mammalian tissues, and the microscopic anatomy of the organs. It entitles the student to full medical credit in histology. Lectures and laboratory. *I; (5).* Dr. ———.

Prerequisite: Physics 2a; Chemistry 1, 2, 3, 5a, 9, and 9c; Zoology 2 and 3.

2. **MAJOR COURSE.**—This course will include a study of the physiology of nerve and muscle, circulation, respiration, secretion, digestion, metabolism, etc., entitling the student to full credit in physiology in the medical school. Lectures and laboratory work. *II; (10).* Dr. ———, Mr. CORPER.

Prerequisite: The same as for Physiology 1.

3. **UNDERGRADUATE THESIS.**—This course is offered to undergraduates who wish to take a thesis course.

4. **MINOR COURSE.**—Especial emphasis is laid upon those facts

that serve as a basis for practical hygiene, and for helping students to teach physiology in high schools. Lecture demonstrations, recitations, and laboratory work. Students who have had chemistry and zoology in high schools only may be admitted to the course at the option of the instructor. *I*; (5). Mr. CORPER.

Prerequisite: Chemistry 1; Zoology 10.

5. SPECIAL PHYSIOLOGY.—This course is designed to meet the needs of those advanced students who wish to take up a special line of work not specified in one of the other courses and not involving the preparation of a thesis. At the discretion of the head of the department, students may register for such work. Students are given opportunity for work in Physical Diagnosis and Pharmacology Laboratory periods and conferences. *I, II*; (3 hours or more).

Dr. STANLEY, Mr. CORPER.

6. HYGIENE.—This course must be taken by young women who take physical training for credit. The course deals with those practical hygienic questions of everyday life that are wholly or in large part under the control of each individual. *I*; (1). Dr. ———

POLITICAL SCIENCE

COURSES FOR UNDERGRADUATES

Courses 1, 3, and 4 listed below are intended to furnish a general survey of the field of national, state, and city government in the United States and should be taken by all students who expect to specialize in political science.

1. AMERICAN FEDERAL GOVERNMENT.—A course introductory to the study of national government in the United States, particular emphasis being given to historical development, organization, powers, limitations, and practical working. *I*; (3).

Professor GARNER, Mr. GARDNER.

Prerequisite: At least 30 hours of University work.

3. AMERICAN STATE GOVERNMENT.—A study of the evolution of the American state constitution from the colonial charter; powers, rights and obligations of the states under the Federal Constitution; methods of formation and of admission to the Union; comparative study of the organization of state government; constitutional resemblances and diversities. *II*; (3). This is intended to be a con-

tinuation of Course I though either may be taken independently of the other.

Professor GARNER, Mr. GARDNER.

Prerequisite: At least 30 hours of University work.

4. MUNICIPAL GOVERNMENT.—An introductory study of the organization of city government in the United States. Emphasis is given to the causes which have led to the growth of cities; the powers and liabilities of municipal corporations, and the problems of governing the modern municipality, particularly those relating to urban transportation, police, light and water supply, charities, education, municipal ownership of public utilities, etc. Lectures, assigned readings and reports. *I*; (2).

Professor GARNER.

Prerequisite: Course I or 3 or the equivalent of either.

9. ELEMENTS OF JURISPRUDENCE.—The origin, growth, and nature of positive law. A systematic arrangement and analysis of the concepts of law. *II*; (3).

Dr. DODD.

16. THE GOVERNMENT OF ILLINOIS.—The organization and administration of state and local government, including constitutional development, the legislature, the judiciary, the executive, state officers and institutions, and county, town and municipal government. *I*; (2).

Associate Professor FAIRLIE.

17. ELEMENTARY LAW.—A general review of the fundamental principles of the common law and the methods by which legal rights, both of person and property, are defined and enforced. The course is designed to present to students who are unable to take a technical law course, a comprehensive view of the sphere of human action subject to the control of the courts through the application of the rules of private law. *I*; (2).

Dr. DODD.

COURSES FOR GRADUATES AND QUALIFIED UNDERGRADUATES

2a. BRITISH GOVERNMENT.—Political institutions in the United Kingdom and the British possessions, including the Crown, the Cabinet, the House of Commons, and the House of Lords, the party systems, the courts of law, local government, and government in the Crown Colonies and the self-governing colonies. Attention will be given to recent developments and proposed changes. *I*; (3).

Associate Professor FAIRLIE.

Open to graduate students and to seniors who have had six hours in political science.

2b. CONTINENTAL EUROPEAN GOVERNMENTS.—A comparative

study of the national political systems of France, Germany, Austria-Hungary, Italy, and Switzerland, with special reference to constitutional beginnings, political organizations, methods of legislation and administration, and constitutional guarantees for the protection of individual rights. Open to graduate students and seniors who have had at least six hours of work in political science. *II*; (3).

Professor GARNER.

5. THE FEDERAL CONSTITUTION.—An exposition and analysis of the federal system of the United States through a study of the origin and nature of the federal constitution and its development through judicial decision. The constitution in its relation to the geographical divisions of the United States. Jurisdiction of the Federal Courts. State and national citizenship. Powers of the national government in matters of taxation, commerce, money, war, and foreign relations, and consequent limitations on the powers of the states. Effect of later amendments on the federal system. The study of leading cases will be supplemented by text-book work and lectures. *I*; (3).

Dr. DODD.

Prerequisite: Economics I or Political Science I.

6. INTERNATIONAL LAW.—The development of the law of nations; its nature, source, and present status; the equality of states; the doctrine of intervention; the laws of war and peace; the rights and duties of neutrals; the arbitration movement. Lectures, assigned readings, and reports. Open to seniors and graduate students. *I*; (3).

Professor GARNER.

7. AMERICAN DIPLOMACY.—A study of the genesis and present organization of the Department of State; the diplomatic service; the treaty making power; the methods and traditional principles of the foreign policy of the United States; historical review of the principal diplomatic controversies between the United States and foreign powers from the foundation of the government to the present time; the rise of the United States to the position of a world power. Open to seniors and graduate students only. *II*; (2).

Professor GARNER.

8. COLONIAL GOVERNMENT.—A study of the principal systems of colonial administration, notably those of Great Britain, France, the Netherlands, and the United States, including a historical survey of the policy of these countries in dealing with their more important dependencies. *I*; (2).

Dr. DODD.

Prerequisite: At least five hours of work in history or political science.

10. ADMINISTRATIVE LAW.—The nature of administrative law and its relation to constitutional law. The principle of the separation of powers as a rule of law, and judicial control over administrative officials. Legal powers and liabilities of public corporations as administrative authorities. Comparison of American and foreign theories of administrative law. Study of cases and lectures. Open to seniors and to juniors who have taken course 5. II; (3).

Dr. DODD.

11. THE POLICE POWER.—The nature and limits of the police power; the promotion of the general welfare through the regulation of the use of liberty and property; legislation in the interests of the public safety, the public health, the public morals, and the good order of the community. II; (2).

Dr. DODD.

Prerequisite: At least five hours in political science. It is recommended that this course be preceded by course 5.

12. NATIONAL ADMINISTRATION IN THE UNITED STATES.—A study of the administrative powers of the President and Congress, the executive departments and the administrative services of the national government, including a survey of judicial administration and the relation of the courts to the administrative authorities. II; (3).

Associate Professor FAIRLIE.

Prerequisite: Course 1.

13. STATE AND LOCAL ADMINISTRATION IN THE UNITED STATES.—A study of the administrative powers of the state executive and legislature, of state officers and institutions, and the systems of local government, including the relations between state and local authorities and between the courts and administrative officials. II; (3).

Associate Professor FAIRLIE.

Prerequisite: Course 3.

(Not given in 1910-1911; to be given in 1911-1912.)

14. POLITICAL PARTIES.—A study of the development of political parties and their organization and influence on the government, mainly in Great Britain and the United States, with attention to recent legislation governing primaries and nomination methods in this country. II; (2).

Associate Professor FAIRLIE.

Prerequisite: One course in Political Science.

COURSES FOR GRADUATES

101. MUNICIPAL ADMINISTRATION.—This is an advanced course dealing, in the first semester, with the development of cities, the organization of municipal government and its relation to the central government, and political methods and reform movements in cities. Comparisons will be made between conditions in the United States and European countries and recent tendencies in this country will be discussed. In the second semester an examination will be made of municipal functions in the United States and Europe, including police, fire, and health departments, schools and charities, municipal public works, street railways, lighting plants, etc. The work of either semester may be taken independently of the other.
I, II. Associate Professor FAIRLIE.

102. THE NATURE OF THE STATE.—The principles, methods, and relations of political science; the origin, nature, forms, and function of the state; sovereignty and liberty; citizenship and nationality; constitutions, principles of political organization, etc. *I.*
Professor GARNER.

103. SEMINARY IN POLITICAL SCIENCE AND PUBLIC LAW.—The investigation of special problems. Presentation of reports followed by discussions and criticism. The research work of candidates who are writing theses will be under the personal supervision of some individual instructor, to whom they will be expected to report from time to time. *I.*

PSYCHOLOGY

Students who do major work in psychology should take a minimum of six hours in philosophy, four of which will be counted as a part of the total number of hours required for the major in psychology. The courses specially advised are Philosophy 3 and 4.

Psychology 1 and 2 offer a continuous course and cannot be taken separately for credit. These courses are the prerequisites for all further courses in psychology. No student may do graduate work in psychology without having had these two introductory courses and at least three credit hours in philosophy.

INTRODUCTORY COURSES

1. **ELEMENTARY PSYCHOLOGY.**—This course is intended for beginners in psychology. It deals with the structure and functions of the nervous system, and the end-organs, and considers further sensation, perception, imagination, and memory. This course must be followed by course 2 if the student wishes to receive credit. It should not be taken later than the junior year. *I*; (3).

Professor COLVIN, Assistant Professor ARPS.

Prerequisite: One year of University work.

2. **ELEMENTARY PSYCHOLOGY CONTINUED.**—In this course attention is given to the psychology of the thought processes and the general principles of learning. The course also considers critically the principal phenomena of feeling and volition as distinguished from those of the intellect. *II*; (3).

Professor COLVIN, Assistant Professor ARPS.

10. **THE EXPERIMENTAL PSYCHOLOGY OF THE LEARNING PROCESSES.**—This is a lecture and laboratory course intended to equip the prospective teacher with the technique of the modern psychological laboratory for the more accurate investigation and understanding of children, both normal and backward. The prerequisite of the course is ordinarily Psychology 1 and 2. However properly qualified teachers who are at work in the field may be admitted at the discretion of the department. Meetings will be held on Saturday mornings throughout the year. *I, II*; (3).

Dr. SUTHERLAND.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

No student is admitted to any of these courses without at least junior standing.

3. **EXPERIMENTAL PSYCHOLOGY.**—This course is designed to equip the student with the technique for investigation of simpler mental processes and to train him in the accurate observation and recording of these processes. Individual differences are emphasized and independent thought is encouraged. *I*; (3).

Dr. SUTHERLAND, Mr. KELLEY

Prerequisite: Physiology 1 and 2.

4. EXPERIMENTAL PSYCHOLOGY CONTINUED.—This course is a continuation of 3 and may not be taken separately. *II*; (3).

Dr. SUTHERLAND, Mr. KELLEY.

5. GENETIC PSYCHOLOGY.—This course considers the development of the child from infancy through adolescence. The development of the nervous system and growth of the body are traced in connection with the mental development. *II*; (2).

Professor COLVIN.

Prerequisite: Psychology I and 2.

6. COMPARATIVE PSYCHOLOGY.—This course aims at an analysis of animal behavior and its interpretation. The literature is reviewed with particular emphasis on the problems now under investigation at the various laboratories. The learning process is analyzed in the light of experimental results. *I*; (2).

Assistant Professor ARPS.

Prerequisite: Psychology I and 2.

9. PHYSIOLOGICAL PSYCHOLOGY.—This is a course in the physiology and psychology of the central nervous system. It consists of lectures and laboratory periods. *I*; (2).

Dr. SUTHERLAND.

Prerequisite: Psychology I and 2.

12. MINOR PROBLEMS IN EXPERIMENTAL PSYCHOLOGY.—This is an advanced laboratory course in which special investigations are undertaken by the student. *I, II*; (2 to 5).

Professor COLVIN, Dr. SUTHERLAND.

Prerequisite: Psychology 3 and 4.

COURSES FOR GRADUATES

101. RESEARCH.—Opportunity to investigate advanced problems in experimental psychology and in comparative and genetic psychology is offered to properly qualified graduate students. *I, II*.

Professor COLVIN, Assistant Professor ARPS, Dr. SUTHERLAND.

102. CONTEMPORARY LITERATURE.—This course considers the most important problems of contemporary psychology with their historical bearings. *I, II*.

Professor COLVIN.

111. THE PSYCHOLOGY OF THE INTELLECTUAL PROCESSES.—A critical discussion of sensation, perception, attention, memory, imagination, judgment, and reasoning. *II*.

Assistant Professor ARPS.

113. ABNORMAL PSYCHOLOGY.—This course considers defects in the different fields of sensation, illusions, hallucinations, automat-

isms, trance, hypnosis, suggestion dreams, the subconscious, defects of speech, defects of emotion and volition, defects of memory and association, obsessions, impulsions, genius and insanity, temperament and personality. *II.* Dr. SUTHERLAND.

114. THE PSYCHOLOGY OF MEMORY.—In this course are discussed the functions of memory in guiding behavior and action, the dependence of memory on the various sense departments, on age and on general intelligence; the analysis of memory consciousness; interpretation of memory curves, imaginal types; associative aids, etc., unconscious falsification of memory; memory and the acquisition of skill; practice curves and the analysis of consciousness in different practice stages. Assistant Professor ARPS.

PUBLIC SPEAKING

See English

RHETORIC

See English

ROMANCE LANGUAGES

FRENCH

FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Study of grammar. Drill in pronunciation. Reading of simpler modern authors, with exercises in composition and conversation. *I, II; (4).* Associate Professor CARNAHAN, Dr. JONES, Dr. SBEDICO, and others.

Associate Professor Carnahan is in general charge of this course.

2. MODERN PROSE; POETRY AND DRAMA.—Rapid reading of representative modern authors. Advanced syntax and composition. *I, II; (4).* Dr. SBEDICO.

Prerequisite: French 2.

3. INTERMEDIATE PROSE COMPOSITION AND CONVERSATION.—This course is conducted entirely in French, giving facility in idiomatic expression, both in writing and in speaking. Readings, themes, and

talks upon France and French life. *I, II; (3).* Mr. ———

Prerequisite: French 2.

Note: This course is required of those who expect the recommendation of the department to teach French.

4. ADVANCED COMPOSITION.—A continuation of French 3 with special emphasis upon advanced syntax. *I, II; (2).* Mr. ———

Prerequisite: French 3.

8. MODERN FRENCH DRAMA.—A study of the drama in France from the beginning of the nineteenth century to the present time. Rapid translations and sight reading. Lectures. Reports on collateral reading. *I, II; (2).* Mr. ———

Prerequisite: French 2.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

10. GENERAL SURVEY OF FRENCH LITERATURE.—An introduction to more extended study of special periods and authors. The student becomes acquainted with some of the literary masterpieces of France and with the main currents of French literature from the beginning to the present time. *I, II; (2).*

Associate Professor CARNAHAN.

Prerequisite: French 2.

Note: This course is strongly recommended to those who desire the endorsement of the department to teach French.

21. MODERN FRENCH NOVELISTS.—A study of the novel in France from the beginning of the nineteenth century to the present time. Hugo, de Vigny, Balzac, Flaubert, de Maupassant, Daudet, Zola and living writers. Lectures. Reports on collateral reading. *I, II; (2).*

Associate Professor CARNAHAN.

Prerequisite: French 8, 10, or 24.

24. THE SEVENTEENTH CENTURY.—A study of the greater masterpieces of the seventeenth century in France with especial emphasis upon the drama. *I, II; (2).*

Prerequisite: French 2.

25. COURSE FOR TEACHERS.—Discussion of the various methods of teaching French in this country and abroad. Actual contact with class-room problems. *I; (1).*

Associate Professor CARNAHAN, and other members of the department.

Prerequisite: Twenty-four hours' credit in French.

FOR GRADUATES

102. OLD FRENCH READINGS.—First Semester: Chrétien de Troyes and the court epic. Second Semester: Readings from Marie de France, the prose chroniclers, and the dramatists of the middle ages. *I, II.*

103. OLD FRENCH PHONOLOGY AND MORPHOLOGY.—Development of Old French from Vulgar Latin. *I, II.*

Associate Professor CARNAHAN.

125. SEMINARY.—An opportunity is given here for research in special fields of French and other Romance literatures.

SPANISH

FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Grammar and easy reading. Special emphasis is laid upon the acquisition of the ability to understand spoken Spanish. *I, II; (4).*

Assistant Professor FITZ-GERALD, Dr. SBEDICO, Mr. OWEN.

2. CONVERSATION AND COMPOSITION.—Reading of modern prose, conversation and composition. The vocabulary of everyday life is emphasized. Commercial correspondence. *I, II; (2).*

Dr. SEYMOUR.

Prerequisite: Spanish 1.

3. GENERAL INTRODUCTION TO SPANISH LITERATURE.—Rapid reading of selected works of representative modern authors. Composition and advanced syntax. Selections from the works of the most important authors of the seventeenth century will be studied during part of the second semester. *I, II; (3).* Dr. SEYMOUR

Prerequisite: Spanish 1.

4. ADVANCED CONVERSATION AND COMPOSITION.—Commercial correspondence. Reading of commercial Spanish. *I, II; (2).*

Dr. SEYMOUR.

Prerequisite: Spanish 2.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

II. THE SPANISH DRAMA OF THE SIXTEENTH AND SEVENTEENTH CENTURIES.—*Encina, Torres, Naharro, Lope de Vega, Lope de Rueda, Tirso de Molina, Calderon, Ruiz de Alarcon, Moreto, Rojas*

FOR GRADUATES AND UNDERGRADUATES

Zorilla; Schack's Dramatic Literature. I, II; (3). Dr. SEYMOUR.
Prerequisite: Spanish 3.

12. THE NOVELA OF THE GOLDEN AGE.—A study of the political and social conditions in Spain from 1560 to 1700 will be followed by an examination of the various kinds of prose fiction produced in this period, with special attention to *Don Quixote* and the *Novelas Ejemplares* of Cervantes. *I, II; (3).*

Assistant Professor FITZ-GERALD.

Prerequisite: Spanish 3.

FOR GRADUATES

118. THE EARLY SPANISH SATIRISTS.—Juan Ruiz, Martínez de Toledo, Pero López de Ayala. A study of the life of the times as shown by the satirists. *I, II.* Dr. SEYMOUR.

121. OLDEST MONUMENTS OF THE SPANISH LANGUAGE.—Historical grammar and palaeography. *I, II.*

Assistant Professor FITZ-GERALD.

122. ORIGINS OF THE SPANISH DRAMA.—Lectures and private reading. *I, II.*

Assistant Professor FITZ-GERALD.

ITALIAN

FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Italian grammar with composition and conversation. Bowen's *Italian Reader*; Marinoni's *Italian Reader*; De Amicis' *Novelle*; Manzoni's *I Promessi Sposi.* *I, II; (3).*

Dr. SBEDICO.

Prerequisite: One year of university work in French, Spanish, or Latin.

2. LITERARY COURSE.—First semester: Rapid reading from the works of the principal Italian writers of the nineteenth century. Second semester: Dante: The *Vita Nuova* and the *Inferno*. Selected stories from Boccaccio's *Decameron.* *I, II; (2).* Dr. JONES.

Prerequisite: Italian 1.

SCANDINAVIAN LANGUAGES

See Germanic Languages

SOCIAL SCIENCES

See Economics, History, Political Science, Sociology

SOCIOLOGY

1. GENERAL SOCIOLOGY.—Essential notions involved in the application of scientific method to social interpretation, and certain main teachings of sociology as to causes operative in determining prevalent social realities; relations between the life of the individual and of society, etc. Fundamental for lawyers, teachers, journalists, and other social workers. *I*; (3).

Professor HAYES.

Prerequisite: Junior standing or equivalent preparation. If possible Psychology 1 and 7 should precede or accompany this course.

2. SOCIAL CONTROL.—An explanation of the methods by which society controls the conduct, beliefs, and desires of its members, by law, religion, education, public opinion, and other and subtler agencies; together with a study of the rational motives of conduct revealed by analysis of the facts of social life. *II*; (2).

Professor HAYES.

Prerequisite: Sociology 1.

3. COMPARATIVE AND GENETIC SOCIOLOGY.—A description and comparison of different modes of social activity (economic, political, legal, ethical, religious, domestic, etc.) as they prevail or have prevailed among people at different stages of progress, savage, barbarous, and civilized; inductions from such facts, including a theory of social evolution and the method of progress. *I*; (2).

Professor HAYES

Prerequisite: The same as for Sociology 1. It is desirable that Sociology 1 precede or accompany this course.

4. PSYCHOLOGICAL SOCIOLOGY.—The conditioning of social activities by each other; public opinion, public sentiment, leadership, mobs, fashion, customs, conventionality, periods of social productivity and decay, etc. *II*; (3).

Professor HAYES.

Prerequisite: Sociology 1.

(Not given in 1910-1911.)

5. CHARITIES AND CORRECTIONS.—The causes, prevention, and treatment of poverty and crime. *II; (3).* Professor HAYES.

Prerequisite: This course is open to all juniors, and to sophomores who have had one semester's work in economics or political science.

12. LABOR PROBLEMS.—The first semester is devoted to a study of present labor conditions and to remedies proposed other than trade unionism. Attention is given to such evils as unemployment, poverty, woman and child labor, and improper housing. Remedial plans such as profit sharing, co-operation, and labor legislation are considered. The second semester is given more especially to an examination of labor organizations. The history of trade unions, internal organization, restrictions as to membership, collective bargaining, limitation of output, objections to piece work, strikes, boycotts, and injunctions are studied. The course during the second semester is open only to those students who take the first semester's work. This course is identical with Economics 12, and students majoring in either sociology or economics, who take this course, must count it in their major department. *I, II; (3).* Dr. TOWLES.

Prerequisite: Economics 1 and 3.

See also Economics 21 (Socialism and Social Reform).

COURSES FOR GRADUATES

102. THE DEVELOPMENT OF SOCIOLOGY.—A reading course in the original works of the writers who have contributed most to the development of sociology, accompanied by discussions with the instructor. Meetings by appointment. *I, II.* Professor HAYES.

Prerequisite: A good reading knowledge of either German or French.

150. SEMINARY.—*I, II.* One session of two hours each week. Open to graduates only. Professor HAYES.

SPANISH

See Romance Languages

SWEDISH

See Germanic Languages

ZOOLOGY AND ENTOMOLOGY

ZOOLOGY

Courses 10 and 2 constitute together a general survey of the subject involving a year's work and should be taken as the best introduction to later work in zoology. In the second year a student may choose as a line of work, either morphological experimental, ecological, faunistic, or systematic courses. The courses on microscopical technique (3) and current literature (20) are of value in all lines of work. Medical students should take courses 3 and 6 in the second year. Those preparing to teach zoology in the high school will find field zoology (17a, 17b) and ecology (9) of especial value, and should not overlook the importance of a course in general entomology.

COURSES FOR UNDERGRADUATES

10. GENERAL ZOOLOGY.—An introduction to animal biology, including the general principles of structure, function and inter-relation of animal forms, with especial reference to the origin and development of animal life. In addition to the fundamental facts the course presents in outline the simpler and best-established generalizations in zoological theory and is the appropriate preparation for pursuing further work in zoology along any line. Lectures, laboratory, and quiz work. *I* or *II*; (5).

Professor WARD, Assistant Professor ZELNY, Dr. ADAMS, and assistants.

2. VERTEBRATE ZOOLOGY AND COMPARATIVE ANATOMY.—The structure and functions of vertebrate organs; the classification of the Chordata; an outline of the early stages of vertebrate embryology and the vertebrate tissues. Systems of organs are considered in respect to their anatomy, function, ontogeny, and evolution in the vertebrate series. In the laboratory anatomical studies are made of selected types of the Chordata. Lectures, laboratory, and quiz work. *II*; (5). Mr. —————

Prerequisite: Zoology 10.

17b. FIELD ORNITHOLOGY.—A course especially designed to give an acquaintance with the birds of the vicinity. Identification, food relations, seasonal distribution, and migration activities receive chief attention. Students are advised to provide themselves with

opera or field glasses. The course may be taken without laboratory work for two credits or with laboratory work for three credits. II; (2 or 3). Associate Professor SMITH.

COURSES FOR GRADUATES AND UNDERGRADUATES

3. MICROSCOPICAL TECHNIQUE AND GENERAL VERTEBRATE EMBRYOLOGY.—Theory and practice of microscopical technique, followed by the study of vertebrate embryos in early stages of development. In the laboratory the student will first be trained in the ordinary methods of fixation, embedding, section cutting, staining, and mounting. Embryological material will be prepared, and used later in connection with the study of introductory embryology, which completes the course. I; (3). Mr. ———

Prerequisite: Zoology 10, and 2.

6. VERTEBRATE ORGANOGENY.—A continuation of Course 3 intended for medical students and others who desire an acquaintance with the development of the organs of the vertebrate body. The course includes lectures, assigned readings in a text-book of human embryology, and laboratory studies on embryos of the chick and pig. II; (3). Mr. ———

Prerequisite: Zoology 10, 2, and 3.

9. ANIMAL ECOLOGY.—Introductory study on the relation of animals to their natural environment. Special stress is laid upon the processes of change in environment and their influence upon animal life. Field trips are made for a study of the local fauna and the conditions under which it lives, and for instruction in methods of observation and the making of notes and collections. In the laboratory the specimens collected are observed and determined, reports are prepared, and a working knowledge of the literature is acquired. Principal attention is given to insects, mollusks, reptiles, amphibians, and fishes. II; (5). Dr. ADAMS.

Prerequisite: Zoology 10.

11. PRINCIPLES OF ZOOGEOGRAPHY.—An introduction to the study of the geographic distribution of animals, in which particular attention is given to the faunas of North America and of Illinois. The fauna is considered in its relation to the complete environment (climate, physiography, geology, vegetation, etc.) and from the standpoint of its origin and its dynamic relations. Two or three lectures a week, laboratory work on maps, and field excursions;

Saturday excursions to be arranged. *I*; (3 or 5). Dr. ADAMS.

Prerequisite: Zoology 10.

13. EXPERIMENTAL EMBRYOLOGY AND REGENERATION.—An analysis of the factors concerned in individual development. Open only to juniors and seniors, except by special permission. Lectures and demonstrations. *I*; (2).

Assistant Professor ZELNY

Prerequisite: Zoology 10.

13a. EXPERIMENTAL EMBRYOLOGY AND REGENERATION.—(LABORATORY)—The application of the experimental method to a definite problem in embryology or regeneration. The work will be individual. *I, II*; (1 to 5).

Assistant Professor ZELNY.

Prerequisite: Zoology 10 and 13.

15. VARIATION AND HEREDITY.—An analysis of the facts of variation and heredity with reference (a) to the factors of organic evolution and (b) to the principles of animal breeding. Lectures and demonstrations. *II*; (2).

Assistant Professor ZELNY.

Prerequisite: Zoology 10 and 13.

15a. VARIATION AND HEREDITY.—(LABORATORY).—The application of the experimental method to a definite problem in variation or heredity. The work will be individual. *I, II*; (1 to 5).

Assistant Professor ZELNY.

Prerequisite: Zoology 10, 13, and 15.

17a. FIELD ZOOLOGY.—The work is planned to give as comprehensive a knowledge as practicable of the animal life of a restricted locality. Collection, preservation, and identification of various kinds of animals, together with observations on the habits and life histories of selected forms, constitute the major part of the work. *I*; (3).

Associate Professor SMITH.

Prerequisite: Zoology 10.

17c. ADVANCED FIELD ZOOLOGY.—A continuation of 17a and 17b, providing an opportunity for intensive work on more restricted problems in connection with the local fauna. A taxonomic or distributional problem is studied and the work may be made introductory to subsequent investigation in this field. *I, II*; (3 to 5).

Associate Professor SMITH.

Prerequisite: Zoology 10 and 17a or 17b.

5. ANIMAL BEHAVIOR.—Lectures and demonstrations on the reactions of the lower animals to external stimuli. The results of

experimental work on the influence of light, heat, gravity, chemical substances, etc., are considered with reference to the habits of animals in their normal environment. The course will include such studies of sense organs and adaptive structures as may be necessary. *II*; (2). Mr. ———

Prerequisite: Zoology 10, or Psychology 1.
(Not given in 1910-1911.)

7. THE STRUCTURE AND FUNCTIONS OF THE VERTEBRATE NERVOUS SYSTEM.—Lectures and laboratory work on the structure of the vertebrate nervous system including a study of the grouping and chaining of the neurones to form the central and peripheral nervous organs; of the nervous impulse; of the stimulation of the sense organs; and of various reflex actions. The work will include dissections, practice in the preparation of nervous tissues for the microscope, and experimental physiological work. *I*; (3).

Mr. ———

Prerequisite: Zoology 10.
(Not given in 1910-1911.)

29. ADVANCED ANIMAL ECOLOGY.—A study of special problems in ecology, distribution and faunas, with reference to the interpretation of the relation between animals and their environments. Conferences, laboratory and field work. *I, II*; (2 to 5). Dr. ADAMS.

21. INTRODUCTION TO ZOOLOGICAL RESEARCH.—Students looking forward to graduate work and to independent investigation will be assigned definite topics, usually repeating the work of earlier investigators and will be directed in working out the morphology, life history, or reciprocal relations of invertebrate forms. Laboratory work with stated conferences and assigned reading. *I, II*; (2 to 5). Professor WARD.

Prerequisite: One year in zoological courses.

20. CURRENT LITERATURE.—The instructors and advanced students of the department will meet at stated intervals as a journal club for the presentation and discussion of the results of recent zoological investigation. This course is open to all qualified students of zoology and should be taken by those intending to graduate with a thesis. *I, II*; (1). Assistant Professor ZELNY.

Prerequisite: One year of Zoology.

8. THESIS INVESTIGATION.—A candidate for graduation who selects a zoological subject as a thesis is required to spend three hours

a day during his senior year in making a detailed investigation of an assigned topic. While this work is done under the general supervision of an instructor, it is in its methods and responsibilities essentially original work. *I, II; (5).*

Professor WARD, Associate Professor SMITH, Assistant Professor ZELNY, Dr. ADAMS.

Prerequisite: Two years in zoological courses.

ENTOMOLOGY

Entomology as taught at the University is distinctly differentiated from the work in zoology. Those preparing for service as economic entomologists should take, if possible, all the courses offered except Course 5. Students preparing for the teaching of zoology should take either 2 and 4, or 3 and 4, or, if possible, all three of these courses.

1. ELEMENTARY ENTOMOLOGY.—A general information course of lectures, supplemented by demonstrations in the laboratory and in the field. Open to all students. *I, II; (2).*

Assistant Professor FOLSOM.

2. GENERAL ENTOMOLOGY.—This course and Entomology 3 form a year's connected major work in entomology, covering substantially the whole field. The present course is devoted mainly to field entomology in the fall, and later to the morphological and physiological aspects of the subject. Beginning with the collection and preservation of specimens and the making of field observations, it is continued by laboratory studies of typical insects, made with special reference to the recognition of adaptive structures, and experimental work intended to determine their exact utilities. *I; (5).*

Assistant Professor FOLSOM.

Prerequisite: Entomology 1 or 4 or equivalent.

3. GENERAL ENTOMOLOGY.—To be taken either with or without the preceding course. The classification and determination of insects, the study of life histories in the insectary and by field observation, and the collection of information with respect to the ecological relations of insects, are the principal objects of this course. *II; (5).*

Assistant Professor FOLSOM.

Prerequisite: Entomology 1, 2 or 4.

5. ADVANCED ENTOMOLOGY.—Under this head students desiring

advanced work in entomology, especially as a preparation for thesis work in this subject, are individually provided for on consultation with the instructors. The course may be made to cover one or two semesters and to earn a three-hour or a five-hour credit in each. At least a three-hour course for one semester will be required as a preparation for entomological thesis work. *I, II; (3 to 5).* Professor FORBES or Assistant Professor FOLSOM.

Prerequisite: Entomology 2 and 3.

6. THESIS INVESTIGATION.—Students specializing in entomology select a thesis subject, preferably during the junior year. They are expected to give three hours a day to investigation upon it, under the supervision of an instructor, during their senior year. *I, II; (5).* Professor FORBES, Assistant Professor FOLSOM.

Prerequisite: At least a three-hour course in Entomology 5.

7. SYSTEMATIC ENTOMOLOGY.—This course, while primarily entomological, is designed to be of general use to students of biology. The lectures include a historical and critical survey of the systems of classification; a discussion of the aims and methods of classification; the nature of species, genera, and other groups, and the rules of nomenclature; the preparation of taxonomic articles, involving the study of bibliography, synonymy, analytical keys, etc. These subjects receive practical treatment in the laboratory, and to qualified students the unworked material of the State Laboratory of Natural History is available for study. *I, II; (3).*

Assistant Professor FOLSOM.

Prerequisite: A semester course in zoology or entomology.

8. ADVANCED ECONOMIC ENTOMOLOGY.—A course of lectures, recitations, and field and laboratory work intended to prepare students for service as economic entomologists in state and government positions. Agronomy 7 and Horticulture 1, 2, and 3. should also be taken as a part of this preparation. *I, II; (3).*

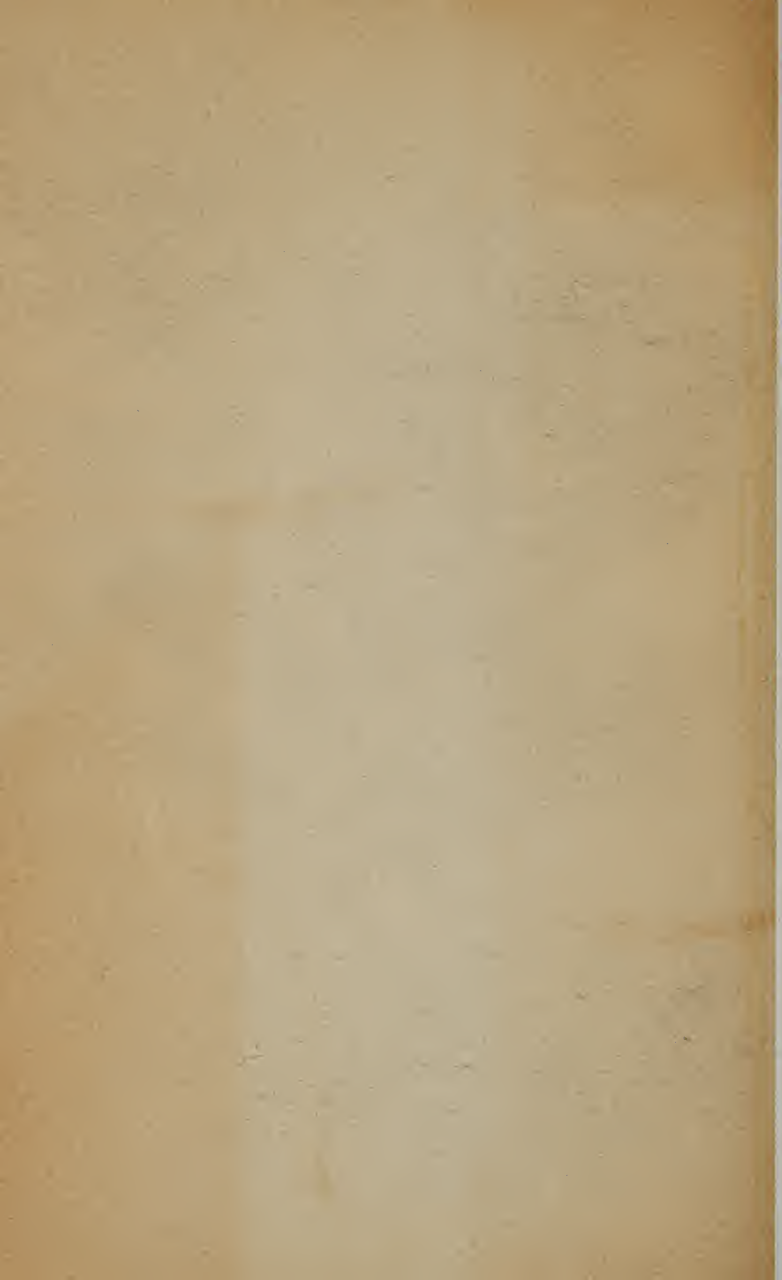
Professor FORBES, Assistant Professor FOLSOM.

Prerequisite: Entomology 2, 3, and 4.

INDEX

- Admission, 13; by examination, 23; by high school certificate, 23; by transfer of credits, 24; subjects accepted for, 13; description of, 14; subjects required for, 13; as special students, 24; to advanced standing, 24.
- Advanced standing, admission to, 24.
- Agricultural subjects, counted for A.B. degree, 28.
- Agriculture for admission, 14.
- Aid, beneficiary, 44.
- Aims and scope of the College, 12.
- Algebra, for admission, 14.
- Arrangement of Courses, 28; banking, 33; business administration, 30; consular service, 32; household administration, 36; journalism, 35; preliminary to law, 37; railway administration, 33; railway transportation, 34.
- Art and Design, description of courses in, 50.
- Astronomy: description of courses in, 52; for admission, 14.
- Banking, course, 33.
- Beneficiary aid, 44.
- Board, 47.
- Board of Trustees, 4.
- Bookkeeping, for admission, 15.
- Botany: description of courses in, 53; for admission, 15.
- Bryan prize, 42.
- Business administration, course of instruction in, 30.
- Business course, 30.
- Business Law: course in, 31; for admission, 15.
- Calendar, 5.
- Chemistry: description of courses in, 56; for admission, 15.
- Civics, for admission, 16.
- Clubs, 47.
- Commercial geography, for admission, 16.
- Classics, description of courses in, 62.
- Class of 1895 Loan Fund, 45.
- Consular service, course for, 32.
- Contests and prizes, 40; oratorical, 41.
- County scholarships, 43.
- Courses, general description of, see Description of courses, 50.
- Debating and oratory, 41.
- Degree: granted, 25; requirements for, 25.
- Description of Courses, 50; accountancy, 72; art and design, 50; astronomy, 52; botany, 53; chemistry, 56; classics, 62; economics, 66; education, 74; English, 78; entomology, 136; French, 126; geology, 86; German, 90; Greek, 62; history, 96; household science, 102; Italian, 129; Latin, 64; mathematics, 105; military science, 113; Norwegian, 95; philosophy, 113; physical training, 115; physics, 115; physiology, 118; political science, 119; psychology, 123; public speaking, 85; rhetoric, 83; Romance languages, 126; Scandinavian, 95; sociology, 130; Spanish, 128; Swedish, 95; zoology, 132.
- Drawing, for admission, 16.
- Economics: description of courses in, 66; for admission, 16.
- Education, description of courses in, 74.
- Edward Snyder department of Students' Aid, 44.
- Electives, 26.
- English, note on major in, 26.
- English composition and rhetoric: for admission, 16.
- English language and literature, description of courses in, 78.
- English literature, for admission, 16.
- Entomology, description of courses in, 136.
- Examination: admission by, 23; for scholarships, 43.
- Engineering subjects, counted for A.B. degree, 27; combined arts and engineering course, 39.
- Expenses, 45.
- Faculty of the College, 8.
- Fees, 45.
- French: as a major, 26 note; description of courses in, 126; for admission, 18.
- Freshman required subjects, 28.
- Freshmen, subjects open to, 29.
- General Assembly scholarships, 43.
- Geology: description of courses in, 86; for admission, 19.
- Geometry, for admission, 19.
- German: as a major, 26 note; description of course in, 90; for admission, 19.
- Graduation: requirements for, 27; agricultural courses counted for, 28; engineering courses counted for, 27; law courses counted for, 27; library science counted for, 28; music courses counted for, 28.
- Greek: description of courses in, 62; for admission, 20.
- Group of subjects, stated, 25.
- Hazleton prize medal, 41.
- History: description of courses in, 96; for admission, 20.
- Honorary societies, 40.
- Honors, 39.
- Hospital Association, 47.
- Hour, definition of, 25.

- Household administration, course in, 36.
 Household science: description of courses in, 102; scholarships, 44.
 Italian, description of courses in, 129.
 Journalism: course in, 35; description of courses in, see English composition.
 Latin: description of courses in, 64; for admission, 21.
 Law; course in business law, 31; for admission, 15.
 Law, preliminary course, 37.
 Law studies counted for A.B. degree, 27.
 Legal study and college work, 38.
 Libraries, 7.
 Library science, courses counted for A.B. degree, 28.
 Loan Fund, Class of 1895, 45.
 Major: definition of, 26; in English, in French, and in German, 26 note.
 Major electives, 26.
 Manual training, for admission, 21.
 Mathematics, description of courses in, 105.
 Medals, 41.
 Military decorations, 40; military scholarships, 44.
 Military science, description of courses in, 113.
 Music, courses counted for A.B. degree, 28.
 Norwegian, description of courses in, 95.
 Oratorical contests, 41.
 Philosophy, description of courses in, 113.
 Physics: description of courses in, 115; for admission, 21.
 Physical geography: courses in, see Geology; for admission, 21.
 Physiology: description of courses in, 118; for admission, 22.
 Political science, description of courses in, 119.
 Prizes and contests, 40.
 Psychology, description of courses in, 123;
 Public speaking, description of courses in, 85.
 Railway administration, course in, 33.
 Railway transportation, course in, 34.
 Religious societies, 47.
 Requirements for graduation, 25.
 Rhetoric, see English.
 Romance languages, description of courses in, 126.
 Scandinavian languages, description of courses in, 95.
 Scholarships, 43.
 Senior credit in freshman courses, 27.
 Societies, honorary, 40; auxiliary to courses of study, 47; literary, 47; religious, 47.
 Sociology, description of courses in, 130.
 Spanish, description of courses in, 128.
 Special students, terms of admission, 24.
 Swedish, description of courses in, 95, 96
 Theses, Bachelor's, 25.
 Transfer of credits, admission by, 24.
 Trustees, board of, 4.
 Unit, definition of, 13.
 University, general statement, 6.
 University, gold medal, 41.
 University, honors, 39.
 Zoology, description of courses in, 132; for admission, 22.





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